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Head Master.—THOMAS H. KEY, A.M.

The School will OPEN on MONDAY, the 25th of September. The Session is divided into three terms—viz. from the 25th of September to Christmas, from Christmas to Easter, and from Easter to the 4th of August. The yearly payment for each Pupil is 15l., of which 5l. are paid in advance each term. The hours of attendance are from a quarter-past Nine to three-quarters past Three. The afternoons of Wednesday and Saturday are devoted exclusively to Drawing.

The subjects taught (without extra charge) are Reading; Writing; the Properties of the most familiar objects, natural and artificial; the English, Latin, Greek, French, and German Languages; Ancient and Modern History, Geography, both Physical and Political; Arithmetic, and Book-keeping; the Elements of Mathematics, and of Natural Philosophy; and Drawing.

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Further particulars may be obtained at the Office of the College.

CHAS. C. ATKINSON, Secretary to the Council.

The COLLEGE LECTURES in the Classes of the FACULTY of MEDICINE commence on the 2nd of October; those of the FACULTY of ARTS on the 16th of October.

August, 1843.

UNIVERSITY COLLEGE, LONDON.—JUNIOR SCHOOL.—Mr. W. HASELWOOD, Private Tutor and Assistant Master, RECEIVES a limited number of PUPILS from the School. The house adjoins the play-ground of the University, to which (with permission of the Council) a communication has been opened for the pupils' recreation. Mr. Haselwood undertakes the tuition of the pupils under his care in the subjects connected with their College reading, and in those branches of education that have an immediate reference to their future prospects in life. Each pupil has a separate bed; and the number being limited, a term's notice is required prior to removal.—Further particulars may be obtained by application at Mr. Haselwood's residence, No. 20, Upper Gower-street.

KING'S COLLEGE, London.—SCHOOL.—The THIRD TERM will begin on TUESDAY, the 19th instant, when new Pupils will be admitted. Further information may be obtained at the Secretary's Office.

Sept. 1843. J. LONSDALE, Principal.

KING'S COLLEGE, London.—DEPARTMENT of GENERAL LITERATURE and SCIENCE.—The COURSE of LECTURES for the Matriculated Students will commence on Tuesday, the 3rd of October next.

DIVINITY..The Rev. the Principal and the Rev. the Chaplain.
MATHEMATICS..Professor the Rev. T. G. Hall, M.A.; Tutor, Rev. T. A. Cock, M.A.
CLASSICS..Professor the Rev. R. W. Browne, M.A.; Tutor, Rev. J. Brewer, M.A.
ENGLISH LITERATURE..Professor the Rev. F. D. Maurice, M.A.

The Classes for private Instruction in the Hebrew, Oriental, and modern foreign languages, under the direction of Professors M'Caul, Forbes, Brasseur, Bernays, Rossetti, and De Villalobos, will also be resumed on the same day.

Chambers are provided for matriculated Students desirous of residing in the College; and some of the Professors and Gentlemen connected with the College receive Students into their houses.

Further information may be obtained upon application at the Secretary's Office.

Sept. 1843. J. LONSDALE, Principal.

ST. THOMAS'S HOSPITAL.

THE AUTUMNAL MEDICAL SESSION will commence on MONDAY, the 2nd OCTOBER, 1843.

INTRODUCTORY LECTURE..Mr. Grainger, at 2 o'clock.
MEDICINE..Dr. Marshall Hall and Dr. Barker.
THE EXANTHEMATA..Dr. George Gregory.
SURGERY..Mr. Green and Mr. B. Travers.
ANATOMY, GENERAL, and PHYSIOLOGY..Mr. Grainger.
DESCRIPTIVE and SURGICAL..Mr. F. Le Gros Clark.
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DISEASES and OPERATIONS of the TEETH..Mr. E. Saunders.
CLINICAL LECTURES by the Physicians and Surgeons.

The SUMMER SESSION will commence in MAY.

PATHOLOGICAL ANATOMY..Dr. Marshall Hall and Dr. Barker.
OPHTHALMIC SURGERY..Mr. Mackmurdo.
PRACTICAL CHEMISTRY..under the direction of Dr. Leeson.
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373,738 oz. Silver delivered at their works agreeably to contracts entered into, the proceeds	*Dollars.* 418,037	14 6
16,084 cwt. of Leads, of which 8,084 had been shipped to England, the proceeds, including a profit insured on cargo, per *Ocean Child*, which vessel foundered at sea	81,618	0 26
8,000 cwt. remained for sale or further shipment. The cost of the Buildings at Alicante	33,430	9 0
The cost of Machinery from England, and erecting seven furnaces	28,696	16 15
The cost of a Smelting Establishment at Garrucha, with five furnaces complete, which now yields from 40,000 to 45,000 ounces of silver monthly, besides lead, at a comparatively small expense, owing to its proximity to the mining district	45,000	0 0
	107,127	5 15
Profits on an average of nine months' work, with actual force at both works, on a capital of only 50,000 dlrs.	54,904	7 16
Deduct extraordinary expenses, which will not occur again, incurred in bringing from England an experienced assayer, and the necessary workmen of every description, including their salaries until the works were ready	10,000	0 0
and interest on monies taken on loan	14,204	19 30
	24,204	19 30
	D. 30,699	7 20

Net gain on 30th April, 1843, including every charge from commencement of the enterprise 16 months ago, for a dividend of 61 per cent.

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LONDON, SATURDAY, SEPTEMBER 9, 1843.

REVIEWS

The Drama in the Middle Ages, and the Passion-play at Ammergau—[*Das Theater im mittel Alter, &c.*] By Dr. Görres. Munich, Cotta.

ALL readers conversant with the annals of the European stage, are aware, that the origin—the how, the when and the where—of those singular religious spectacles, denominated 'Mysteries' and 'Moralities,' is still a *vexata quæstio*. The mists that enveloped, as it were, the childhood of the gorgeous Athenian drama, have been long cleared away by the common consent of the learned. Gay Dionysos and his jocund satellites, the fauns and satyrs; the goat, meet victim to the vineyard-god; the waggish mummers of the Grecian village—the lofty poetry of the dithyramb succeeding their rude and extemporaneous strains; the Icarian and his improvements; and lastly, the gradual transition of the embryo muse till it attained its glorious perfection under the life-inspiring influence of its three greatest luminaries,—all these matters have ceased to be mooted questions. Not so with the drama of modern Europe. The disquisitions of Warton, and, in our day, the researches of Mr. Collier, have thrown much light certainly on this still dark leaf of literary history. But however satisfactory their conclusions may seem to be, we still think that much, illustrative of the mutual workings and influences of the early Continental and English drama upon each other, still remains to reward the labour of the antiquary.

The work before us, which, we believe, is the forerunner of a comprehensive and detailed history on this subject, throws some new light upon these matters, as far as the author's own country is concerned; and he adduces evidence, demonstrating pretty clearly that in these pristine representations, out of which grew the present acted drama, Germany can lay claim to a much more remote antiquity than writers have generally been willing to concede. But, by way of preamble, we shall, at the risk of treading here and there on beaten ground, lead the reader's attention to certain facts connected with the subject.

Probably the oldest drama on a religious theme of which we have any account, is one composed by a Jew named Ezekiel, entitled Ἐξαγωγή. It was a tragedy representing the departure of the children of Israel from Egypt. The fathers of the church, and particularly Eusebius, have preserved fragments of this piece; but, as a whole, it is not extant. The next is the well-known 'Christus Patiens' of Gregory Nazianzen, modelled on the plan of the Athenian drama, in which were represented the sufferings of the Redeemer; the choruses being metamorphosed into Christian hymns. The third of the known writers of this kind of composition was "a pensive nun, devout and pure," *Hroswitha* or *Rhoswitha*, of the abbey of Gandersheim, in Saxony, who lived in the 10th century. Amongst other writings on sacred subjects, she composed, we are informed, six spiritual plays in Latin prose. Maguin, Villemain and Saint Marc Girardin, have largely commented on the writings of this pious lady in their lectures on modern literature. "In the prolegomena," says our author, "she explains her motive for inditing the above plays: 'she had observed,' she said, 'that Terence was studiously conned over by many Catholics, on account of the allurements of his style; although he was a poet addicted to pourtraying the lewd behaviour of unworthy females, and thereby inculcated much unprofitable stuff in the minds of his perusers.' Seeing this, then, she had not delayed to lift up her voice (*clamor validus Gandeshemensis*) for the honour of God and virtue. 'I have striven,' she proceeds, 'according to the measure of my understanding (*juxta mei facultatem ingenioli*) to celebrate the triumph of modesty, and show how the weakness of woman can put to shame the brutality of man.'" These plays, according to Dr. Görres, were acted by Hroswitha's fellow nuns. If so, this is the earliest representation of which we have historical proof. Indeed, England does not possess, as far as we are aware, any *written* religious drama bearing so early a date. The miracle play of St. Catherine, the earliest that is known to have been performed in England (viz. in the year 1110, at Dunstable), was, according to the best authorities, composed in French, and produced under the direction of the Frenchman Geoffry, member of the University of Paris, and afterwards Abbot of St. Albans. It will be all the more strange if these Saxon plays are anything more than religious pageants—as L'Enfant, the historian of the council of Constance (1414), relates that the Bishop of Salisbury, and the five other bishops who were present at this religious congress, invited the authorities and respectable burghers of the town of Constance to a pageant at which was performed the 'Mystery of the Holy Nativity,' the 'Adoration of the Wise Men,' and the 'Slaughter of the Innocents;' and from this he concludes that English clergymen were the originators of the scriptural drama in Germany: an opinion in which more than one German has followed him. Menzel, for instance, who says, "As he (Pope John XXIII.) was crossing the Alps, his carriage happening to be overturned in the snow, he cursed in the Devil's name, to the great *edification* of the pious peasants of Arlberg.* Besides the main actors in this scene, many spectators and divers other persons streamed together to the town. Among the rest were seven hundred travelling dames, or lewd women, whose company neither lords spiritual nor temporal could do without; besides 346 players, conjurors, and mountebanks. *The players were brought by the English clergy, and represented brilliant scenes. From hence the German theatre derived its origin.*"

It is more than probable, that as the churchmen throughout Europe were in that age in communication with Rome,—deriving light from the same source—these Mysteries or Miracle plays, sprung up everywhere about the same period; if so, differences about date relate rather to the accidental preservation of particular dramas than to the origin of the drama; but it appears to us that it was in England that they first became general as a source of public amusement. Frequent are the allusions made to them in our early writers. Chaucer's Wife of Bath diverted herself with these amusements during the flesh-macerating season of Lent, when her lord was absent in London.

> Therefore made I my visitations
> To plays of *miracles* and to marriages.

Again, in Robert Langdale's 'Piers Ploughman's Crede,' two lines are put in the mouth of a friar, which plainly intimate that miracle-plays were performed, not only in London (a standing monument of which fact is to be found in the notable inscription on Clerkenwell pump) and the larger cities, but also in the market towns of the provinces—

> We haunten no tavernes,
> At markets and miracles we medely us never.

In process of time they appear to have been exchanged for episodes of classic mythology, though still continuing to be solemnized on "high days of the calendar" as of yore. Thus the love-lorn Julia relates to Silvia in the 'Two Gentlemen of Verona,' how—

> At Pentecost,
> When all our pageants of delight were played,
> .....
> I did play a lamentable part
> Madam, 'twas Ariadne, passioning
> For Theseus' perjury and unjust flight.

At an earlier period, we find these Mysteries, or Miracle Plays, or Pageants, for it is often difficult to say which is referred to, simultaneously in vogue throughout all Europe. At Paris, the Confrèrie de la Passion, as it was called, received a patent from Charles VI., in the year 1404, which gave that body the exclusive privilege of acting mysteries. We know from Muratori, that in Italy they were acted towards the close of the thirteenth century. In the year 1264 A.D., the brotherhood of del Gonfalone was instituted at Rome, and performed religious pageants in the Coliseum till 1549, when Pope Paul III. issued an interdict against their continuing any longer to use that building. Nevertheless, the representations proceeded, but in another place. Coeval with the establishment of this society was the origin of our "Chester Mysteries." The Corpus Christi plays, which are of somewhat later date, were performed at York for a number of years, the different guilds of the town undertaking to perform certain parts. Indulgences even were granted by Pope Urban to those who attended them.

The libraries of the Netherlands and Flanders are said to be, at the present moment, complete storehouses of old religious plays, written in the Flemish dialect: and we will venture to hope, that the new impulse which has been given to the study of the ancient literature of Belgium, will bring forth fruits in this respect. At Valenciennes, a society called "Confrèrie de Notre Dame du Pay," was, according to the ancient chronicles of that city, founded in 1229 and renewed in 1426. "The four presidents were intrusted with the providing of three minstrels and two trumpeters, for the more favourable representation of their festivities. A stage used to be erected on the Sunday of the ascension of the Virgin, and her image was carried in procession to the accompanying chorus of twelve persons, clad like the Apostles, and singing children representing angels. In the great aisle of the church at that point, where there was the greatest profusion of statues and pictures, a stage was erected for the effigy of the Virgin, above which shone a heaven, and the mystery of the ascension was thus accurately represented. Hereupon came forth certain persons, who recited poems in praise of our Lady. The most successful of these received from the society a silver crown, the second best a silver chaplet, and the rest two bottles of wine a piece for their good intentions. The preacher got half a sheep as his perquisite, the apostles, above mentioned, a plate of fruit and half a bottle of wine, and the Carmelites and Dominicans of the town, who had been present at the pageant, by invitation, received, as a guerdon, double rations from the refectory."

The brotherhood of St. Luke, a similar society composed of painters, sculptors, architects, and tapestry-workers, existed at Antwerp, and a play acted by them in the fifteenth century is still preserved.

In comparison with England, which, in addition to other scattered remnants, possesses entire three whole series of these religious compositions, viz. the Coventry, the Townley (or Wildkirk) and the Chester mysteries; Germany is, as yet, but meagerly supplied with *published* specimens of such writings. In the Royal

* Apropos of this council, "Date operam, ut illa *nefanda schisma* eradicetur," said the vain Emperor Sigismund to the assembled conclave. A cardinal exclaimed, "Domine, schisma est generis neutrius," upon which Sigismund retorted, "Ego sum Rex Romanus, et super grammaticam."

Library at Munich, as we are told by our author, are manuscript fragments of more than one religious drama. They are written in German and Latin, and are ascribed to the fourteenth and thirteenth centuries, and even to an earlier period. Another fragment, on the subject of the resurrection, and dating in all likelihood from the fifteenth century, has been published in the *Deutsche Lese-Buch*, by Wackernagel. It is remarkable, inasmuch as it is a species of pastoral farce, possessing regular comic scenes, between a merchant and his wife, interspersed with serious and religious songs, thus showing like a kindred English piece, the 'Adoration of the Shepherds,' the gradual transition from strictly religious themes to the every-day scenes of common life; laying, by this means, the foundation for the innovations of Jacob Ayrer and Hans Sachs, under whose auspices Hanswurst, the German clown, or gracioso, of the piece, first began to convulse the audience. Another fragment, written half in Latin, half in vulgar French, 'The Wise and Foolish Virgins,' begins with the following words of the bridegroom,—

Adest sponsus, qui est Christus;
Vigilate virgines!
Pro adventu ejus gaudent,
Et gaudebunt homines.

In the town records of Berlin and Cologne are to be found accounts of the sums disbursed by the burghers on behoof of the composers and directors of these mysteries. The following is curious:—

Chance (says our author) has put us in possession of the fact of a mystery having been represented in 1332, in the Thiergarten at Eisenach, by divers clergymen of the place and their scholars, for the amusement of Frederick, Margrave of Thuringia, and Landgrave of Meissen. It was to commemorate the restoration of peace after a long succession of bloody feuds. The players had selected the parable of the Wise and Foolish Virgins' (this seems, by the bye, to have been a favourite subject). Matters, however, turned out rather untowardly for them. For when the foolish virgins begged the wise ones for the loan of a little oil, and were ejected by the bridegroom, they set to whining and weeping most piteously, and invoked the saints to intercede in their behalf, but neither saints nor holy virgin could do aught to alleviate their doom. Upon this, the Landgrave fell into doubts, got into a furious passion, and cried out, "What is the good of your Christian creed if God will not take pity upon us, no, not at the intercession of the Virgin Mary and all the saints?' Five mortal days did they, according to the chronicle, remain at issue on this point, and the learned monks had no little ado to make him at last comprehend aright the meaning of the gospel.

A saying, which rests, however, on no very good authority, states that scenic representations, though not of a religious cast, were given as early as 1416 in the Tyrol. Duke Frederick "of the empty purse," so runs the legend, when outlawed by the Emperor Sigismund, fled from Constance, and concealed himself for some time among the frightful glaciers of the Oetz-thal, the same fastnesses in which the patriot Hofer baffled for a while the pursuit of his foes. At length the Duke ventured down to Landek, in the valley of the Inn, and had an interview with one Von Müllinen, who was still faithful found among the faithless. With this man he arranged a plan for discovering whether "all love for their unhappy lord was extinguished in the breasts of his folk." The project they hit on was this: a play was contrived, depicting in lively colours the sufferings of a deserted and beggared prince. The attempt succeeded; the spectators were moved even to weeping at the misfortunes of the deserted one; at that moment the unknown stranger, who had lately appeared in the valley, came forward, and discovered himself to be their banished sovereign; and they willingly extended to him the hand of welcome and protection.

That same year the Emperor Sigismund visited England, and during his sojourn in this country the play of St. George and the Dragon was performed for his special diversion at Windsor. Soon after, this identical pageant became very general in Germany, though we do not hear of it previously; it is not unfair, therefore, to suppose, that for this piece at least, the Germans were indebted to us. At Botzen, in Southern Tyrol, where it was annually exhibited, the part of St. George was sustained by a nobleman, while the king's daughter was played by a "Fräulein"—*i. e.*, miss of gentle blood. It was only lately, says our author, that the properties thereunto appertaining, such as the ingeniously-wrought armour of the knight, were sold by the town to a Russian curiosity hunter.

Gervinus in his learned, though somewhat abstruse work, 'The Poetical National Literature of the Germans,' says that miracle plays were exclusively confined to the north of Germany at the time of the Reformation. Our author, who is the son of old Professor Görres, the Arch-ultramontanist of Munich, takes occasion to allude to this, and in somewhat of a splenetic mood. "At that period," says he, "they had become debased into a mere vehicle for polemics;" and he proceeds to quote one, whose title is 'Ein ganz lustig Spiel, darin des Antichristlichen Papsthums teufflische Lehre und Wesen wundermeistlich dargeben wird,' which quaint old German being interpreted, is "A right merrie play, in the which the devilish doctrine and essence of Antichristian Papacy is represented after a wondrous masterful fashion." The fact is, Luther himself does not seem to have discountenanced these monkish lucubrations; perhaps, on the contrary, he was glad to use them as auxiliaries in his great work. He saw that they might be made to return and plague the inventor. In his preface to 'Judith' he recommends these sort of diversions on truly Christian grounds. "And perhaps the Jews played such poems in like manner as one plays the 'Passion,' and such like Holy Scripture histories amongst us, that the folk might learn to trust in God, as it were, in an image or play." At all events, the assertion of Gervinus will not hold at a subsequent period, for we learn from Menzel that in 1571, the 'Last Judgment' was played at Stuttgard, when the fire of hell extended somewhat beyond its legitimate bounds, the devils fled, and God the father, from aloft, began to call out dreadfully, fearful of perishing in the flames. The above-mentioned author also tells us, that in 1593 a 'Tragico-Comedia Apostolica' was brought out at Lauingen, in which there were no less than 246 performers.

In England the days of masque and antique pageantry have long gone by, and our Christmas carols are, perhaps, the only living pastime left to remind us of the substance of the people's histrionic amusements four centuries ago. It is not so in Germany: but we must reserve our notice of the Passion Play at Ammergau till another opportunity.

A Series of Essays on the Principles of Evil manifesting themselves in these last Times. By S. R. Bosanquet, Esq. Burns.

Toleration in religion, utilitarianism in philosophy, and the commercial system in politics, appear to Mr. Bosanquet to be "the three unclean spirits like frogs," which St. John in the Apocalypse saw "come out of the mouth of the dragon, and out of the mouth of the beast, and out of the mouth of the false prophet." He proposes (at least we so interpret his reveries) that we should get rid of our European systems of responsible administration, and establish Asiatic despotism in our land; he declares that the Chinese empire makes the nearest approach to moral perfection in its government, and labours to prove that institutions are pernicious in direct proportion to their being based on reason. We have long lamented the growth of a mystic school anxious to set authority above argument, to place legends on a level with chronicles, and to forbid the exercise of scrutiny when doubtful evidence is presented; but we did not expect that any disciple of that school would go so far as to declare that the study of Aristotle's logic necessarily leads to infidelity, that parables are preferable to syllogisms, and a proverb entitled to more respect than a deduction of reason. We have met many disposed to bestow praise on past times, but until now we never found any prepared to assert that the present progress of civilization is from corruption to corruption, and that all the apostacies described by the prophets and apostles were types of the downward progress of society in England, and in Christendom influenced by the example of England. An author who fixes all his hopes for the regeneration of humanity on the empire of China, may safely be dismissed with scant notice; but an author who pretends to show from facts that the progress of our age and nation is in the direction of iniquity and decay, must not pass without inquiry from those who believe that Divine Providence rules the onward movement of humanity, and that its agency is directed to evolve good from evil, not evil from good.

Two great evils in our present progress, as we understand Mr. Bosanquet's arguments, are, that school-boys are not flogged, and criminals are not hanged so freely as they used to be; and it is a serious ground of complaint that motives of pleasure and profit are used as stimulants to exertion instead of "fear and force." This indeed is the great principle of his philosophy,—that obedience, to be valuable and praiseworthy, should be unreasoning and compulsory, for there can be no merit in a man's pursuing that which he perceives to be advantageous. We agree with him that the tendency to inquire into the reasons on which existing institutions are based is rapidly increasing, but we deny that the effect has been to weaken in the slightest degree the influence of beneficial institutions.

It is a matter of some interest to note a few of the social changes which have taken place within the last thirty years, and see how far they justify Mr. Bosanquet's charge of social degeneracy. Commencing with a subject on which he has bestowed some thought, "the education of the higher and middle classes," our author has justly reprobated the exclusive attention bestowed on the languages and literature of Greece and Rome; but no one can deny that this exclusiveness is fast disappearing. Let the inquirer cast but a glance at the *curriculum* of studies in any of our large schools, and it will be found that history, mathematics, the elements of moral philosophy, portions of the experimental sciences, modern languages, and in many cases natural theology, have been superadded to the old scholastic course. We have conversed with many connected with the management of schools, and all have agreed that there is a higher moral tone among the school-boys of the present, than of the past generation; flogging is either falling into disuse or greatly alleviated; rebellions, and barrings-out are scarcely known; and that voluntary study is fast becoming the rule, and compulsion the exception; and that it is not uncommon to find a taste for general literature developed in early youth.

As to the general tone of society, it is within

the memory of even men of middle age that a dinner party among the higher or the middle classes was a scene of indulgence in stimulants to an excess which would not now be tolerated; a host believed it his duty that no man should leave his table sober, and a guest conceived himself bound to do justice to his host's hospitalities, by going at least to the verge of intoxication. With this custom, looseness of conversation has been banished, and the habit of profane swearing abandoned, cock fights, dog fights, bull baitings, bear baitings—exhibitions common and universal in our younger days—are now nowhere to be seen or heard of—and the patrons of pugilism are not as heretofore to be found among the noblemen and gentlemen of England—cruelty to animals no longer forms a part of fashionable amusements.

The importance which Mr. Bosanquet himself attributes to the treatment of the working classes is a proof of advancement. It is not very long since when the masses were described as "the swinish multitude," and when the advocates of their rights and comforts were answered by sneers and ridicule. Now every political party inscribes on its banner advocacy of the rights of the labouring poor. We quite agree with Mr. Bosanquet, that industry is still subjected to many unfair conditions, and that there exist unwise impediments to the accumulation of small profits, and the realization of small capitals; but we deny that these impediments are of modern growth, and could easily show that most, if not all, have risen from the obstinate maintenance of institutions unsuited to the present state of commerce and labour.

Mr. Bosanquet, in good set terms, asserts that cheating is the principle of modern trade, and that confidence in mercantile honour has ceased to exist. We assert, that the principles of commercial credit were never more firmly established nor more extensively acted upon. Frauds of great magnitude may be pointed out, but before deducing any inference, their proportion to the entire of the mercantile transactions of the community must be ascertained. It is generally agreed that the annual amount of bills, notes, and other representatives of credit, do not fall very short of one thousand millions annually. The proportion of fraudulent non-fulfilment of engagements cannot be easily ascertained, but we have never seen them estimated so high as two millions annually; it would be well if Mr. Bosanquet and his school paid some attention to the figures of arithmetic, as well as the figures of speech.

We will not follow Mr. Bosanquet through his interpretations of prophecy, which are equally remarkable for their boldness of assertion, and want of reasonable foundation. He avowedly spurns logic; he is obviously ignorant of the original language of the old Testament, and not very conversant with that of the New, and he declares himself an enemy to reason, perhaps because reason is manifestly an enemy to him.

Excursions, Adventures, and Field Sports in Ceylon. By Lieut.-Col. James Campbell. 2 vols. Boone.

Col. Campbell promises, in his preface, to treat of high themes, and make the weightier matters of colonization and commerce the "burden of his strain," at least in an equal proportion with the adventures and field sports, which figure so conspicuously in the title-page. The promise, however, is not fulfilled. Whenever, from certain sober indications, we begin to hope for some useful information, the Colonel is sure, after a few words of graver tendency, just sufficient to let us know that he did not consider hunting and fishing the sole objects of existence, to break off abruptly with an elephant hunt or an alligator spearing, and leave us as wise as before regarding "one of the principal" objects of his volumes,—"the commercial and military importance" of Ceylon, and its "numerous advantages to the British emigrant." Amidst his interminable disquisitions on the best gut for fishing lines, and the comparative merits of brass and leaden balls in shooting elephants, and such like idle gossip, we seek in vain for positive information regarding the island of Ceylon and its capabilities. Even his adventures become monotonous, and an air of tiresome sameness runs through the account of his exploits, which are always prefaced by an apology for their apparent incredibility. Some of them, indeed, are hard to believe, and, if believed, are worth nothing but to make the idle gape and wonder. However, it is not possible to write two thick volumes, on a comparatively little known country, that shall be wholly devoid of interest, and there are occasional passages to be found which partially redeem the character of the book. The following description is pretty and pleasing:—

"It has been well and justly remarked, by an elegant writer, that the district of Matura possesses many picturesque beauties. 'Sometimes venerable and majestic trees formed a shade over our heads; sometimes we travelled amidst flowering shrubs; sometimes through cultivated meadows and fields of smiling corn. Nature breathes around an eternal spring; flower blossoms and fruits adorn the woods at all seasons. A vast wilderness of noble plants rises in ten thousand beautiful landscapes, displaying a majesty and richness of scenery and raising emotions of delight and admiration, which cannot easily be described.' This certainly is a very vivid and fascinating description of a country, and in this instance it is a correct one. But how often have I felt afterwards, in passing through or residing in the forests of Ceylon, how awfully impressive is the stillness of noon! Every animal seeks the deepest shade. The fish conceal themselves at the bottom of rivers or lakes, except where the over-hanging foliage screens them from the rays of a too fervid sun. Not a bird is on the wing; and all nature seems as it were to be at rest, were it not that the almost appalling silence is broken only to be made the more impressive, by the continued low buzz or humming of thousands of insects. How powerfully have I felt, in the thickly-wooded neighbourhood of Matura, all this combination of the great and little of so much that is wonderful in nature! But as soon as the evening begins to be somewhat cool, the world seems again to start into new life. Every creature is in motion, and in search of its prey, or of the food it requires of some kind or other, which the Almighty has so bountifully provided for them all. The wild-fowl, of various kinds, fly in large flocks towards their haunts; the Pea and Jungle fowl call their respective broods around them for the night; even the Jackal begins to howl for its prey. Numbers of flowers, which had closed their leaves before the scorching beams of the sun, now gently unfold them, to remain open to receive the dew which usually falls so abundantly. Here also the pretty moon-flower among the rest, the leaves of which had been shut all the day, opens completely as if to behold the sun's grandeur, as he takes his leave of us in surprising brilliancy! * * It is generally believed, that birds within the tropics, though they have much more splendid plumage than those we find in Europe, cannot sing: this is not the case here; for several of them have the sweetest notes that I ever listened to; and one in particular sings so delightfully as to have acquired the name of the Ceylon Nightingale, from its notes being heard for some time after sunset. But, even when the moon does not afford what may be here truly called her silvery light, we do not always remain in that profound darkness I have before spoken of; for no one, who has not beheld it, can form an idea of the effect produced at night by thousands and tens of thousands of Fireflies and other insects, which emit phosphoric light! I have taken one of them, and put it inside the glass of my watch, and have been able to see the hour distinctly by its flickering light."

Perhaps the Anti-Duel Association may take a hint from Col. Campbell's account of a Ceylon love quarrel:—

"I likewise saw at Bovegoddé what the people called a *water fight*, between, as they told me, two competitors for a dark-eyed maid: one of the lovers, the challenger, being highly exasperated by the pangs which the green-eyed monster—jealousy, generated in his heart. They both stood up to their knees in the lake, opposite each other; and, with their hands, constantly dashed the water, in a curious and expert manner, into each other's faces. I saw the combatants thus—I can scarcely say, hotly engaged, about nine in the morning; and, at three in the afternoon, they were still hard at work, and the battle was then still doubtful; for, according to established rule, whichever of the two warriors, no matter what may be the pretence or cause, stops first, if it be only for a moment, dashing water at his adversary, is considered to be vanquished. Hundreds of people were looking on, apparently deeply interested in the result; as he who is thus overcome, as they assured me, is never known again to aspire to the hand of the lady who has caused the antefebrile combat. What a pity it is, that this cooling mode of settling disputes, is not introduced into the Green Isle, and made to supersede the sprig system, so prevalent there."

Col. Campbell enters at some length on a description of the cultivation of the cinnamon plant:—

"The best and most productive soils of Ceylon are a brown loam, resulting from the decomposition of gneiss or granitic rock, abounding in felspar, or a reddish loam resulting from the decomposition of clay iron-stone, called in Ceylon, Kabookstone. The soil of the cinnamon garden, in the neighbourhood of Colombo, (as well as that near Galle and elsewhere, in which the cinnamon tree is grown; and in many places it is produced naturally,) is a remarkable instance of the silicious kind. The surface of the ground in many places, where the cinnamon plant flourishes, is white as snow: this is pure quartz sand. Below the surface a few inches, where the roots penetrate, the sand is of a grey colour. A specimen of this, dried thoroughly, was found to consist of—

98 . 5	silicious sand
1 . 0	vegetable matter
0 . 5	water
100 . 0	

It may appear surprising that the cinnamon plant should succeed best in so poor a soil; but, other circumstances considered, it admits of explanation. The garden is nearly on a level with the lake of Colombo, its situation is sheltered, the climate is remarkably damp, showers are frequent, the temperature is high, and uncommonly equable. These are the principal peculiarities to which the excellence of the cinnamon, and the luxuriant growth of this valuable shrub, in a soil so apparently unpromising, may be justly attributed. * * The interior is supposed not to be so well adapted for the growth of the cinnamon as the sea coast; at least, that hitherto brought from thence is coarser and thicker in appearance, and of too rich and pungent a taste. The best description, and that which grows in the gardens around Colombo, and at the other places mentioned, is obtained from what is termed the Laurus Cinnamomum. This is a tree of small size, from four to ten feet in height: the trunk is slender, with a number of branches shooting out from it on every side. The wood is light, soft, and porous, and in appearance resembles that of the common osier. A vast number of roots and fibres run out from the root of the tree, and shoot up rapidly into slender twigs, which form, as it were, a bush around it. The leaf, though not of so deep a green, resembles that of the laurel. When the leaf first appears, it is of a red or scarlet colour, but it afterwards changes gradually to green. The blossom is white, and when in full blow, seems, as it were, to cover the tree in a very beautiful and striking manner. This tree produces a species of fruit resembling an acorn, but not so large, which, when ripe, is gathered by the natives, in order to extract oil from it; this they use for perfuming their bodies and hair, and, when mixed with cocoa-nut oil, it also gives a very pleasant and good light. When

the tree is old and decays, it is usually burned down to the ground; the roots are then seen to shoot up again in long straight plants, much better formed than the preceding ones. The bark of these shoots is extremely valuable."

The mode of preparing the bark is thus described:—

"Those who were employed to bark the trees were called Choliahs, and over them were placed officers, whose business it was to superintend the workmen, to take charge of the woods, and to prevent cattle or improper persons from trespassing. The cinnamon was prepared as follows, for exportation. It was the duty of the Choliahs to find out trees of the best quality, which their experience enabled them to do. Such branches as were three years old, and appeared proper for the purpose, were then lopped off with a large crooked pruning knife. From these branches the outside thin coat of the bark was scraped off, with a knife of a peculiar shape, concave on the one side, and convex on the other. With the point of this knife the bark was ripped up lengthwise, and the convex side was then employed in gradually loosening it from the branch, till it could be entirely taken off. In this state the bark appeared in the form of tubes, open at one side; the smaller of which were inserted into the larger, and then spread out to dry. When it was sufficiently dried, the bark was made up into bundles of about thirty pounds weight each, and bound up with thin pieces of split bamboo twigs. These bundles were then carried to the Government stores. It was next sorted according to quality. The best cinnamon is rather pliable, and ought not much to exceed in thickness stout writing paper; it should be of a light yellowish colour; and possess a sweet taste, not so hot as to occasion pain, and not succeeded by any after taste. The inferior kind is distinguished by being thicker, of a darker and brown colour, hot and pungent when chewed, and followed by a disagreeable bitter taste. After the quality had been carefully ascertained, it was made up into large bales, each about four feet long. The weight of each bale at the time of packing up was eighty-five pounds, yet it was marked and reckoned only eighty, five pounds being allowed for loss by drying during the voyage to Europe. These bales were all firmly bound and packed up in coarse cloth, made from coir, the filament which surrounds the cocoa-nut. In stowing the bales in the ship, black pepper was sprinkled among them, so as to fill up the interstices; and by this means not only was the cinnamon preserved, but both spices were improved. * * We hear of Colonial grievances, but, of them all, there is none which appears so urgently to call for attention and correction by the competent authorities in England, as the fiscal rigour with which this important branch of trade, and until lately, in spite of every disadvantage, profitable agricultural produce of Ceylon, has for several years been visited; which has naturally led, I regret to say, to its decay; and, if persisted in, must ultimately prove most injurious to it."

Agriculture would seem, from the Colonel's account, to be carried on among the Kandyan population of Ceylon with primitive simplicity:

"The Kandyan plough is only what may be called a crooked piece of wood, something like an elbow; it merely tears up the ground as unevenly as if it were done by hogs. They then overflow the field with water. They plough twice before they sow; but before they give the first ploughing, they let in water upon the land, in order to make it soft and the easier to be worked. After it is once ploughed, they usually make up the banks; for if they were to put off doing so till after the second ploughing, the soil would have become mere mud, totally unfit for banking. These banks are indispensable, not only as paths for the people to walk upon through the fields, who otherwise must go in the mud, but also to keep in and contain the water overflowing the ground. They make these banks as smooth and level as a bricklayer would a wall with his trowel; for in this respect they pay great attention to neatness. These banks at the top are not above a foot in width. But after the land is ploughed, and the banks are finished, it is again laid under water, and remains so till the time for the second ploughing, when it becomes exceedingly muddy, as much from the trampling of the cattle as from the plough; for the more it is stirred up the better. Sometimes they use no plough the second time, but only drive their cattle through and through the field, until the soil is made sufficiently muddy. The land being thus prepared, it is still kept overflowed with water, in order that the weeds and grass may be destroyed. They then soak in water for a night the corn which they intend for seed. The next day it is taken out and laid in a heap, covered over with green leaves; and thus it remains for five or six days, so as to make it sprout. They then wet it again, and lay it in a heap covered over, as before, with green leaves: and thus it is caused to shoot out its blade and roots: whilst this process is going forward, they have prepared the ground for sowing,—which is thus done: they have a board, as before shown, about four feet long, which they drag over the land by a pair of buffaloes or oxen; not flat-ways, but upon its edge, which is so done, that the earth and weeds may be well mixed together; and it also levels and makes the ground so smooth and even, that the water afterwards stands equally over it. It still remains covered with water whilst the seed is growing, and until it is become fit for sowing, which is in about eight days after it was put into water to soak. The seed being ready, they let off the water, and with boards of about a foot in length, fastened to long poles, they dress the land over again; laying it very smooth, and making small furrows in it, that in case rain or other water should come in, it may drain away; for more water now would very likely rot the seed. They then sow, which they do with great evenness, strewing the seed carefully with their hands. The ground now remains without any water, until the grain has grown three or four inches above it. There had been gaps made before in the banks, to let out the water; these are now stopped up to keep it in; which is not only to nourish the corn, but to kill the weeds; for they always keep their fields as clean and neat as a garden. When the grain has grown about nine inches high, the women are employed to weed it, and to pull it up where it has grown too thick, so as to transplant it to places where it may be wanted. It then stands overflowed, till the grain is ripe; when they let the water off, in order that it may become dry, and fit for reaping. They never, as I before remarked, use manure of any kind; but their mode of ploughing, trampling, and soaking the ground, apparently obviates the necessity for it. The Kandyans are excellent reapers, and as they had assisted each other in tilling the ground, they do so likewise at harvest. They first reap one man's field, and then go to the next, and so on, until the whole of the grain is cut; and their custom is, that every man, during the time his corn is reaping, has to find all the rest with food. The women's work is to gather up the corn after the reapers, and carry it all to one place. When the corn is to be trodden out, (half a dozen buffaloes will tread out fifty bushels in a day), they select a place convenient to their dwellings, where they lay it out around a space about twenty or thirty feet in diameter; from which they cut away the whole of the turf or surface, whatever it may be. They then perform, as Knox tells us, and as I have seen, certain ceremonies. 'First, they adorn the place with ashes, made into flowers and branches, and round circles. They then take divers strange shells, and pieces of iron, and some sorts of wood, and a bunch of betel nuts, (which are reserved for the purpose), and lay all these in the very middle of the part, and a large stone upon them. Then the women, whose work it is, bring each their burthen of reaped corn upon their heads, and go round the pit three times, and then fling it down. After this, without any more ado, they bring in the rest of the corn as fast as they can. For this labour, and that of weeding, the women have a fee due to them; that is, as much corn as shall cover the stone, and the other conjuration instruments, at the bottom of the pit.'"

With these extracts we dismiss Col. Campbell's volumes—and without regret.

The Works of Montaigne. Edited by W. Hazlitt.

[Second Notice.]

Our return to this book is occasioned by the circumstance that it presents the first English version of the Travels of the great essayist, a narrative pregnant with interest, and evincing the same fresh and vigorous understanding, the same philosophy of common sense, which has set the signet of immortality upon the principal work of the same writer. Perhaps M. de Querlon, the original French editor of these Travels, goes something too far when he says they make Montaigne better known to his readers than the Essays themselves; but it is certain that we have here a chapter of his actual history, an autobiography of seventeen months of his existence, and we are to a certain extent saved the trouble of collecting the scattered traits of character, and arranging them, with some mental effort, into a picture of the man. M. de Querlon considers the variety of opinions that have been formed of Montaigne, a proof of the insufficiency of the Essays to determine his true character with precision. We believe that Montaigne himself, could the judgments of his numerous conflicting critics have been laid before him, would have acknowledged the correctness of most of them, notwithstanding their seeming incompatibilities, so thoroughly conscious was he of the variableness of the human mind, and the inconstancy of human conduct, a theme on which he loved to dwell, always illustrating it from his own stores of self-knowledge.

At any rate, in Montaigne's journey we have Montaigne again, with all his health of mind, all his benignity, all his variety, all his acuteness, all his simplicity, all the youthfulness and genuineness of his feelings. He is the same agreeable egoist, the same inoffensive aristocrat, the same good-natured gentleman, the same charming companion. We find him possessing every quality that a traveller should have, with the exception of good health, for in him was the *sana mens* though not *in corpore sano*. His journey is the diary of an invalid, but his bodily pains neither sour his temper, nor deaden his sense of beauty or his enjoyment of society. If there is more than is pleasant to hear about perspirations and dyspepsia and the colic, the reader who is curious on the now popular subject of hydropathy will find ample compensation in the minute details of the various baths in Switzerland and Italy with whose waters, lucid or muddy, Montaigne deluged himself within and without, with a passion for ducking and drenching worthy of Priessnitz himself. If ever there was a man who loved to shake off the fetters of authority, and to think and act for himself, it was Montaigne, than whom the world had never a freer citizen. His opinions are not more of his own forming than his routes of his own choice. He takes the road through the Tyrol, undeterred by the alarming accounts given him of execrable inns, impracticable mountains, and an eternal winter. His sweetness and good-humour smooth the roughest passes of the Alps better than Hannibal's vinegar. Arrived at Brixen he finds it charming, and his reflections are thus given by his secretary, who is the writer of the early portion of the journey, which accounts for Montaigne being spoken of in the third person:—

"He had all his life been very chary of taking other people's judgments as to foreign countries; the tendency of most men being to test the merits of what they see, by what they have been always accustomed to see in their own neighbourhood. He had therefore paid but very slight attention to the accounts he had heard of different places from different travellers; but he said, when he came to this place he wondered more than ever at the obstinate imbecility and narrow-mindedness of such people; for he had always been told that the passes of the Alps in this part of the country were full of danger and difficulty, that the manners of the people were wild and uncouth, the roads impassable, the inns altogether savage places, the climate insupportable; whereas, for the climate, thank God, he had found it exceedingly mild, inclining rather to an

excess of heat than an excess of cold. That in all other respects, if he wished to take his daughter, a girl of only eight years old, on an excursion any where, he would quite as readily trust her upon these roads, as in one of the walks of his garden. As to the inns, he had never been in a country where they were handsomer, more numerous, and more plentifully provided with wines and provisions of every sort, and he had never met with such excellent accommodation at so cheap a rate."

Montaigne fortunately was no Apicius. The palate of a traveller ought not to be over-exquisite, for the best *cuisines* are not to be looked for in alpine valleys, or on the way-side through any country in the world. Even when he pronounces an inn indifferent, he generally adds that he found "plenty of provisions"; and in truth it not often happens in any civilized country that a tourist can miss a tolerably good dinner, if it is not his first object to find one. Montaigne, however, was "assez friand de poisson," and he always mentions the kinds of fish set before him, and often the modes of cooking them by his Swiss and Italian hosts.

Montaigne had the invaluable faculty of winking at the petty inconveniences and *désagremens* incidental to tourists, while his eye was for ever open and vigilant to discover something pleasing and commendable in every scene and object. Upon one occasion his secretary writes :—

"The journey was to him a source of entire delight. When, after passing a restless night, he in the morning called to mind that he was going to visit a town or a place he had never yet seen, he would leap out of bed as gay as a lark, and as light, and meet his friends in the highest spirits."

Montaigne seems to have paid especial attention to matters connected with religion, and certainly evinced no partiality towards the professors of the reformed faith. A little incident at Baden exhibits the way in which the religious strictness of the Protestants revived the same spirit in those who still adhered to the old creed:

"On Wednesday, his landlord bought a very large quantity of fish; and when M. de Montaigne asked him why he did so, he replied that the great majority of the people at Baden ate fish on Wednesdays out of a religious feeling: which confirmed what Monsieur de Montaigne had heard before, that those who there hold the Catholic faith are made the more strict and devotional by the existence of the rival religion."

At the same place Montaigne conversed with a minister of Zurich, and we collect from the colloquy that these early pastors of the reformed church had the good sense not to perplex their flocks with doctrinal subtleties :—

"To-day he got into conversation with a minister of Zurich, a native of that place, who had just arrived; and he found that their first reformed religion had been Zuinglian: from which they had approximated to that of Calvin, a somewhat milder form. When this minister was asked about predestination, he replied that they themselves held a mean between Geneva and Augusta, but that they did not embarrass their flocks with the dispute. In his own particular judgment, he rather inclined to the extreme doctrines of Zuinglius; of which he proceeded to make a high eulogium, saying he considered them to approach the nearest to the primitive Christianity."

At Constance he found "a great many Lutherans," and he undesignedly accounts for this circumstance in the following striking account of the beauties of the ancient religious *régime:*

"The bishop, who is a native of the country, and a cardinal living at Rome, derives a revenue of full forty thousand crowns from this see. There are canonries, in the church of Notre Dame, which are worth fifteen hundred florins a-year, and are held by lay gentlemen. We saw one of these on horseback, coming out to take the air, gallantly equipped in the military style. They say there are a great many Lutherans in the town."

At Linde, or Lindau, he found the Catholic priest monopolizing the revenues, and the Protestant minister engrossing the cure of souls, a spectacle which, *mutatis mutandis*, is to be seen in our own days, in places not so remote as Lindau. At the next town he discusses with a Lutheran minister the differences between the Lutherans and Calvinists on the subject of the Lord's Supper, and Montaigne thought "the doctor made out but a poor case." He then goes on to a place called Kempten, where there were no Catholics but the monks, yet the Catholic service continued to be performed with all pomp and ceremony, which Montaigne, Catholic as he was, considered a "strange" thing. The fortune of the Abbot, and the gentility of the monks, had probably some influence in depopulating the Catholic fold so utterly. Here, too, Montaigne had an interesting dialogue with the Lutheran pastor, which we cannot avoid quoting, as a proof of the superiority of the Lutherans, in point of liberality, to the other Protestant sects, and as an illustration, also, of the intense hatred which they bore to the Calvinists and Zuinglians :—

"To the question:—'Whether they permitted dancing?' the minister replied 'Why not?' To another question: 'Why on the windows and in the decorations of the new organ, they had painted representations of Jesus Christ and other scriptural subjects?' he replied 'That they did not prohibit images which were merely for the purpose of instructing men; all they forbade was the worshipping of them.' To the rejoinder, 'Why, then, had they removed the old images from the churches?' he replied: 'That it was not they who had done so; but that their worthy disciples, the Zuinglians, incited by the evil spirit, had committed this outrage, as well as several others;' which was the same reply that others of the same profession had already made M. de Montaigne; and in particular, the divine at Isne, who when he was asked, 'Whether he hated the figure and emblem of the cross?' exclaimed: 'How! do you imagine me such an atheist as to hate an emblem so dear and glorifying to all Christian souls?' adding: 'that such a thing would be perfectly diabolical.' The same person declared very roundly, when at dinner, that he would rather hear a hundred masses than participate in one of Calvin's sacraments."

Montaigne sometimes combines his remarks on the state of religion with observations on the statistics of beauty. For example at Augsbourg,—

"The ministers do not derive any revenue from their churches, but are paid by the senate. There was a far larger crowd in this one church than in two or three of the Catholic churches put together. We did not see one pretty woman here."

He found the intermarriages of Lutherans and Catholics events of daily occurrence, and it would appear that one creed or the other made a proselyte at every nuptial ceremony. We are told how the question of faith was settled between the enamoured parties, and it appears that Cupid, upon such occasions, acted the part of a doctor of divinity, and should have been painted with a shovel-hat.

At Augusta, Montaigne heard of a very useful bishop :—

"They say at Augusta that they are free, not from mice, but from the large rats which infest every other part of Germany; and they attribute this exemption to one of their bishops, who lies buried here; even the earth round his tomb, they say, has the power of expelling these vermin wherever it is carried, and they sell little bits of it, about the size of a nut, for this purpose."

In several of the Bavarian towns Montaigne saw proofs of the success with which the government of that state resisted what he calls the "contagion" of the Reformation. At Landsberg, he tells us, "the Count of Helfenstein commands at the castle. If any one even dreams of any other religion than the Roman, he had need keep it to himself." It appears that the Jesuits, whom Montaigne highly extols, had great influence with the reigning Duke, and were sagaciously exerting it to put down those prominent irregularities in the lives of the clergy, which had generally contributed so much to excite popular feeling against the Church of Rome. Of this a striking instance is recorded :—

"Kinief, six leagues; a miserable little village in the same duchy. The Jesuits, who have great influence in the government of affairs in this country, have been making a grand movement, which has drawn upon them the hatred of the people, for the purpose of forcing the priests to dismiss their concubines, under great penalties. From the degree in which the priests are sympathised with on this occasion, it would seem that formerly the practice thus invaded was so generally tolerated that it had come to be regarded as perfectly legitimate; and the whole community are at this moment engaged in getting up remonstrances to their duke, in behalf of the priests."

Subsequently, at Rome, he makes the following remarks upon this celebrated order :—

"'Tis amazing what a position this society has attained throughout Christendom; never, I believe, was there any community amongst us that ever occupied so high a place, or that ever produced such immense effects as these will do, if their plans are not interrupted. They occupy well nigh all Christendom, and daily send forth from amongst their body, great men in every class of greatness. It is the part of our system which threatens the greatest danger to the heretics of our time."

Montaigne's reflections on the remains of ancient Rome are those of a philosophic observer and profound thinker. We have only to regret that the characteristic "I" is wanting in the passage :—

"He observed: 'that there is nothing to be seen of ancient Rome but the sky under which it had risen and stood, and the outline of its form; that the knowledge he had of it was altogether abstract and contemplative, no image of it remaining to satisfy the senses; that those who said that the ruins of Rome at least remained, said more than they were warranted in saying; for the ruins of so stupendous and awful a fabric would enforce more honour and reverence for its memory; nothing, he said, remained of Rome but its sepulchre. The world, in hatred of its long domination, had first destroyed and broken in pieces the various parts of this wondrous body; and then, finding that, even though prostrate and dead, its disfigured remains still filled them with fear and hate, they buried the ruins itself; that the few indications of what it had been, which still tottered above its grave, fortune had permitted to remain there as some evidence of the infinite greatness which so many ages, so many intestine and parricidal blows, and the never-ending conspiracy of the world against it, had not been able entirely to extinguish; but that in all probability, even the disfigured members that did remain, were the least worthy of all those that had existed, the malignant fury of the enemies of that immortal glory having impelled them to destroy, in the first instance, that which was finest and most worthy of preservation in the imperial city; that the buildings in this bastard Rome, which the moderns were raising upon, or appending to, the glorious structures of the antique world, though they sufficed enough to excite the admiration of the present age, yet seemed to him to bear a close resemblance to those nests, which the rooks and the swallows construct upon the roofs and walls of the churches in France, which the Huguenots have demolished. Nay, when he considered the space which this tomb occupies, he feared that the real extent, even of that, was not known; he doubted whether the greater portion of the grave itself had not been buried; it appeared to him that the enormous pile which, years ago, was formed merely of such miserable diggings-up, as bits of tiles and broken pots, a pile which had attained the height and size of many natural mountains (for he considered it to be as high as the hill of Gurson, and twice as large), was an express ordinance of fate to let the world thoroughly understand, by this strange and amazing proof of grandeur, how surpassing was the glory and pre-eminence of the city against which they had conspired. He said he could not at all comprehend, when he saw the limited space of some of these seven hills, especially the most famous, such

as the Capitoline and the Palatine, how they could have held so great a number of buildings as have been ascribed to them. Merely looking at the Temple of Peace, the site of the Forum Romanum, the ruins of which look like a mighty mountain, just fallen asunder, he could hardly understand how two such edifices could stand even on the whole space of the Capitoline-hill, yet, besides these, there were on the hill twenty-five or thirty temples, besides a number of private houses. But, in truth, many of the conjectures which one has formed from pictures of the ancient city, are not at all borne out, when you get there, for even the site has undergone infinite changes; some of the valleys are filled up, even the deepest of them, such, for instance, as the *Velabrum*, which, on account of its lying so low, was selected as the main sewer of the city, and formed a water-course, even this has now become as high as the other natural mountains which surround it, and this has solely been done by the gradual agglomeration of the ruins of old Rome; so, the *Monte Savello* is nothing but the heaped-up ruins of part of the theatre of Marcellus. He fully believed that an ancient Roman, could one be brought back, would not be able to recognize the place. It has more than once happened that, after digging a long way down the workmen have come to the top of some high column, which still remained standing on its base far beneath. The modern architects never think of looking for any other foundation for their houses than the tops of old buildings, the roofs of which ordinarily form the floors of modern cellars, deeming it in no way necessary to make any examination as to the foundation of the old edifice itself, or the stability of its walls; they securely base their own structure upon the ruined tops of the structure below, just as chance has happened to dispose them during the lapse of ages, and here they raise their modern palaces, as firm and as safe as though the foundations were solid rocks. There are many whole streets, that stand above the old ones, full thirty feet.'"

He visited the Vatican, but need not have told us, "I especially noticed a Seneca and the Opuscula of Plutarch!" None acquainted with the Essays would be at a loss to guess the books that would first arrest the attention of Montaigne. He also observed, with interest, "the original of the book that the King of England (Henry VIII.) wrote against Luther, and which he sent to Pope Leo X., subscribed with his own hand." Montaigne pronounces the work of the royal author to be "written in good scholastic Latin."

At Ostia he noticed the towers built by the popes at intervals along the coast, to prevent, by the rapid communication of alarm, the descents of Turkish corsairs, particularly during the vintage.

He was an eye-witness at Rome of a procession of Flagellants, and gives the following striking account of it:—

"Between the ranks, walked a file of penitents, who every other minute whipped themselves with cords; there were five hundred of them, at least, whose backs were torn and bleeding in a frightful manner. This part of the exhibition is a mystery I have not yet been able to make out; they are unquestionably most terribly mangled and wounded, yet, from the tranquillity of their countenances, the steadiness of their motion and of their tongue (for I heard several of them speaking), you would have formed no idea they were engaged even in a serious occupation, to say nothing of a very painful one, and yet many of them were lads of but twelve or thirteen years old. As one of them, a mere child, with an exceedingly agreeable and unmoved countenance, was passing just close to where I stood, a young woman near me uttered an exclamation of pity at the wounds he had inflicted on himself, on which he turned round and said, with a laugh: *Basta, disse che fo questo per li lui peccati, non per li miei.** Not only do they exhibit no appearance of pain, or of being reluctant thus to mangle themselves, but, on the contrary, they seem to delight in it; or, at all events, they treat it with such indifference that you hear them chatting together about other matters, laughing, running, jumping, and joining in the shouts of the rest of the crowd, as if nothing ailed them. At certain distances, there are men walking with them, and carrying wine, which they every now and then present to the penitents; some of whom take a mouthful. They also give them sugar-plums. The men who carry the wine, at certain intervals, moisten with it the ends of the penitents' whips, which are of cord, and get so clotted with gore that they require to be wetted before they can be untwisted. Sometimes the wine is applied to the sufferers' wounds. From the shoes and the breeches worn by these penitents, it is easy to perceive that they are persons quite of the lower class, who, at all events the greater number of them, let themselves out for this particular service. I was told, indeed, that the shoulders were protected by some flesh-coloured covering, and that the appearance of the blood and wounds was artificial; but I was near enough to see that the cuts and wounds were quite real, and I am sure that the pain must have been very severe; and, besides, where is the merit of these penitential exhibitions, if they are merely a trick and imposition?"

But the whole account of his sojourn at Rome is animated beyond measure, and abounds with curious incidents, related with vivacity and interspersed with strokes of the observer's peculiar humour and deep reading of society and manners. Rome had for Montaigne greater social attractions than any city he had ever visited. He says,—

"One of the great advantages of Rome is, that it is one of the least exclusive cities in the world; a place where foreigners at once feel themselves the most at home; in fact, Rome is, by its very nature, the city of strangers. Its sovereign is sovereign also over entire Christendom; his jurisdiction generally subjects to his authority all Christians, wheresoever they are, even in their homes in the most distant countries, as much as in Rome itself; and as to all the princes and grandees of his court, the consideration as to whence they came, is of no sort of weight."

In another place he remarks—

"The city is nothing but court and nobility; everybody in it participates in the universal tone of ecclesiastical idleness. There is no trading street to be seen, except, perhaps, a small one or two in the suburbs: there is nothing but palaces and palace-grounds. They have no Rue de la Harpe or Rue St. Denis here; I was reminded of nothing at Paris but the Rue de Seine, or the Quai des Augustins. There is hardly any difference discernible between a holiday and a work-day; all the week through there is something or other going on, in the way of festival or show, and as great a crowd of spectators on one day as on another: the whole population seems made up of prelates, nobles, and ladies riding about in carriages, and forming processions, and of idle sight-seers looking at them."

While he remained at Rome his Essays were submitted to the censorship, and he informs us of the objections taken to parts of them; for instance, the apology for the Emperor Julian. He was treated, however, not only with the greatest lenity, but with the utmost respect:—

"On the 15th of April, I went to take leave of the *Maestro del Sacro Palazzo* and his colleague, who begged me to pay no attention to the censure of my books, which, they told me, several Frenchmen had since informed them, exhibited very great ignorance and imbecility; they assured me that they held in high honour and esteem my intentions and my ability; and that they had no doubt of my affection towards the church; adding, that they had such confidence in my conscientiousness and candour, that they would leave it entirely to myself to omit or correct, in my book, when I wished to reprint it, what I should, on consideration, think too free-spoken; and they referred me, among one or two other points, to my treatment of the word fortune. I thought they seemed very well pleased with me."

These travels impress us with a belief that Montaigne was in heart a truer son of the Church than some of his commentators have supposed. He seems to have taken a lively interest in every effort made by the Catholics to check the torrent of dissent; and if the homage he paid at the shrine of Loretto is not to be received as a demonstration of true devotional feeling, it proves at least the profound respect with which Montaigne was in the habit of testifying for the rites and traditions of his Church, even those most strongly marked with the traits of superstition and absurdity. He received the sacrament in the chapel of Loretto, and added a costly votive offering to the numerous treasures of the sanctuary.

We must close here, although we would willingly extend our extracts, for we are acquainted with no picture so lively of any country in Europe in the sixteenth century as Montaigne has left of Italy in this journey, not to mention his scarcely less interesting account of the scenery and society of Switzerland. There is certainly (as we have remarked before) too much about the colic and dyspepsia, and too much even about bathing, which seems to have been as furiously practised in the days of Montaigne as in ours, particularly by the Germans. We would leave these parts of the book, or the bulk of them, for the meditation of hydropathists, and suggest an edition of this most attractive personal narrative, disencumbered of these unpleasant superfluities, for it only wants a few judicious omissions to become one of the most charming books of travels in any language.

The President's Daughters; including Nina. By Frederika Bremer. Translated by Mary Howitt. 3 vols. Longman & Co.

When we noticed Miss Bremer's tale of 'The Neighbours' we expressed a hope that success might tempt Mrs. Howitt to give us the remainder of the Swedish lady's novels; and here we have 'The President's Daughters,' with a promise of others, if the translator be not unfairly anticipated by those who love, as she says, "to hunt other people's literary hares."

'The President's Daughters' is a worthy companion to 'The Neighbours'—simple and truthful; and though we may never have met elsewhere any one of the characters, all who have ever looked deeply into their own hearts will claim kindred and acquaintance with them. There is not one that offends by exaggeration—not one that is not recognized at a glance by the humanities of our common nature—they are creatures of flesh and blood, and walk the stage of life as it has been trod for ages, and will be trod for ever. No impossible vice, no superhuman virtue, startles us in Miss Bremer's page: we recognize in her heroes and heroines men and women with whom we ourselves could have lived and been happy. 'The President's Daughters' contains little or no plot; the characters are thrown into various situations, and placed under various influences, in order that the effects of circumstances and influences on human character may be shown to us. The heroines (for there are several) are of characters as diverse as could well be drawn, and yet each perfect in its way. Among the most noticeable are the President's daughters—the gloomy Edla, to whom alone, of her family, Nature has been a stepmother—the light-hearted, joyous Adelaide, the personation of feminine gentleness and goodness, self-devoting, yet self-willed, full of life and energy, yet with a calm, well-balanced, intellectual mind—the twin sisters Mina and Nina, of whom Nina survives to be the heroine of a great portion of the story as the meek, quiet maiden, depressed in a mysterious manner by the loss of her twin sister, living under the guardianship and maternal care of her elder sister Edla, who tries to strengthen her naturally yielding temper, and yet repels her by a severity uncongenial to her loving spirit,—born only to

* 'Pshaw: tell her I'm not doing this for my own sins, but for hers.' Montaigne's Italian is never the most correct in the world."

love and be beloved, and yet strangely thwarted, and finally sacrificed, to one whom she loves not: yet these form only a few of the characters, who might each and all set up a claim to be *the* heroine. Early in the story we are introduced to an enthusiastic young artist, Angelica, whom we shall at once introduce to our readers. Angelica has been rhapsodizing on the subject of genius:—

"'Who is the happy, the great, the enviable, on earth? Is it not he who gives to human nature that enlightened beauty which he drew from its breast; who, borne upward by his genius, ascends to heaven to fetch thence fire with which he will kindle the nations? A human life—a little human life—a life of a few years—and to live in this for an immortality—to breathe fire into the hearts of millions of human beings—a human life—so little and yet so vast! How wonderful! How glorious! How sweet the lot to live for a world and to die for the immortally beautiful on earth! O that it might be mine!' Tears of ardent longing streamed down the now glowing cheeks of Angelica. 'Is it for renown?' asked Count Alarik, with a searching glance. 'And would this renown make you happier, Angelica?' inquired the elderly lady with the gentle countenance; 'would it here make you more beloved by your friends? would you actually, with all this striving for millions, make one human being happier? O Angelica! is there, indeed, a nobler lot on earth, a lot which is more worthy to be striven after by a woman's heart, than that of being the whole and entire happiness of one being?' Angelica looked first at one and then at the other of the speakers; a cloud dimmed her brow, but it quickly passed, and she said to Count Alarik, 'No, not for the sake of renown. If I should ever succeed in producing a masterpiece, and time, or the hand of an enemy should efface my name from the picture, I would not complain if the work of my hand and of my spirit lived only for mankind.' To the elderly lady she said, with a low voice and a look of humility, 'I do not know whether I should be happy; I only know one thing, that I must obey the voice which requires from me that I should strive after the immortal in art. God must dispose my fate as He sees best!' And have you weighed, asked Count Alarik, advancing towards her, 'all the difficulties of your path? General opinion, poverty, your sex, which prevents the acquisition of a grounded knowledge—all, all will retard your steps. Listen to wiser counsel, Angelica. Direct yourself according to the taste and the circumstances of the times. Do not strive to attain to the ideal; paint portraits, little scenes out of every-day life, and you will become rich, will live tranquil, loved, and esteemed.' 'I can endure hunger,' said Angelica calmly and fixedly; 'and the censure of the world I do not hear; it would be overpowered by a mightier voice within my own breast. Striving after the highest only will I live!' 'And if you should fail? if you should be deceived in your own powers?' 'Then may God be merciful to me, and let me die!' 'And wherefore this ambition? A less degree of perfection also gives joy, and the good and the beautiful live also in the humbler spheres of life, and there are they more accessible.' 'The highest! the highest!' exclaimed Angelica; 'I will live and die striving after the highest!' 'You have the true artist-soul,' said Count Alarik."

Angelica afterwards becomes the pet of a patronizing Countess, and dies young at Rome, leaving behind her one immortal work. "Angelica lived not in vain. And who that has striven ardently, and laboured honestly, has lived in vain, if it be only for a brief morning hour?" The following sketch of various classes of women is drawn to the life:—

"Some amongst us there are to whom life has been a rough soil; they go through it without being loved, and, what is worse, without being able sincerely to love any one. The frostiness of the air around them chills the warmth in their breasts; they become bitter and hard; and as they can produce no flowers, they turn themselves into rods. They cannot leave virtue and beauty at peace, and they quarrel with beauty and weakness. Let us hope that by the light of a more friendly sun, the tree of their life shall put forth new buds, and that they shall receive and give forth gladness. Others there are, and they are many, whom nature has liberally provided for; they are good and amiable; they love virtue; but the world and temptation, unwise counsellors, and their own hearts' weakness, make them fall. The best heart becomes soiled by unworthy desires and low pleasures. Fallen angels! many are there among them who weep bitter tears over the grave of their own innocence, and these may one day arise in renewed virtue. Others there are who overlay its loss with flowers and mirth; over these weep the angels of heaven. Many others are there also whom nature and fortune made for temptation, but friendly stars have kept watch over them. Their hearts were early attached by a pure love, and a protecting home closed around them like a Midsummer bower. Their joys and their sorrows are alike innocent, and all their intercourse with their fellow creatures is peaceful. No one hates them, and, what is more tranquillizing, no one loves them more or differently to what the Gospel permits. They live loved and honoured, and general opinion calls them patterns and examples. But these quietly happy ones, these untried ones, how often do they pass heavy judgments on those who, in an atmosphere different to their own, have frozen their hearts, or scorched their wings. They fancy that they have a right to despise them; and yet it is possible, after all, that they are in no way superior to them, except in being happier. Others also are there, thank God!—and my heart warms in thinking that I know and love such—who, neither step-children nor favourites of nature and fortune, tempted or not tempted by life, resemble each other nevertheless in this, that they never let anything dim the celestial mirror in their souls. Pure themselves, and hating all evil, yet they pity and pardon those who sin. A heaven of pure compassion lies in their glance, and through it only does the guilty one read his judgment. Good, true, wise, patient, affectionate, they do not permit themselves to be disturbed by human weakness or severity: they go tranquilly on their way; they have a light within them that guides them, and that warmly, beneficently beams around them. They understand how to compassionate those sorrows they have themselves never felt; and when they suffer, they can yet smile joyfully on others. Like the bird of paradise, they hover onwards over the earth, without disfiguring their wings with its dust, and by their loveliness they entice others to follow on their heavenward flight. And now back again——well! but I had nearly forgotten the fifth and most populous class of women, and thus, with them, nearly shut myself out of the creation. I do not know how better to designate them than as 'the harmless.' We, its members, are as numerous as the potatoe, and come, like it, all over the world. We are the world's household fare, and the world would go on badly without us. We fill the room, and yet deprive nobody of a place; we neutralize the warring elements of life, which without us would destroy one another. We are produced by the *juste milieu*, and this our element we seek to diffuse over the world. We call exultation folly, and Sappho a mad-woman. We go to church and to the opera, and don't wish to be much noticed. We take from life exactly what life will give us, and are contented; we put our houses in order, salt our meat according to established rule; speak moderately good or ill of our neighbour, think only as much as is necessary, and beat down the price of every thing that is much praised or greatly in demand—in one word we are what are called 'equal people,' and keep the world in equipoise. We sing best this good song—

Trallala, trallala, tralla, trall;
Trallala, trallala, trallom!"

The following scene between Adelaide and her betrothed will give the reader an insight into the character of both:—

"When these amiable women were gone, Count Alarik said: 'The impression made by personal beauty, is generally acknowledged; I am the last who would wish to deny the beneficent influence of beauty on the mind, its bewitching power on the heart. But what works equally with this, and deeper and more beneficially, are the qualities we have just had an opportunity of admiring in Mrs. L. and her daughters. That fine proportion in the development of the powers of the soul, that clear understanding, that precision and order in the expression and delivery of opinions which instantly make them comprehensible and clear, these make on me an impression, equal to that of beauty; this colouring of the soul, it is true, reveals itself slower, but at the same time it is not so perishable as that of the body.' And so saying he looked at Adelaide, whose beautiful under-lip pouted pettishly. 'To be very beautiful is a temptation,' continued Count Alarik. 'One is so easily led in youth to think that in one's appearance one possesses a treasure, rich enough to give happiness to a whole life. The world moves so joyfully, so pleasantly for the young beauty, so that it is difficult for her to seize the seriousness of life.' 'And why this seriousness, why must it be so important to seize it?' asked Adelaide. 'Because a human being is called to something more than being merely a flower or a butterfly; as such, it is possible to please, to charm, to call forth approbation; but never esteem nor true love.' Adelaide looked oppressed, and tears rose to her eyes. 'Life is so pleasant!' said she. 'God has given us joy and life; why shall we not enjoy his gifts? Ah, let us, let us be joyful!' 'Life has higher and weightier interests,' said Count Alarik with deeper earnestness, 'and which but ill agree with a thoughtless enjoyment of its passing pleasures.' 'There are,' said Countess Augusta, 'weighty and important duties to be performed; man must not live for himself alone——' 'What do you mean, then,' asked Adelaide earnestly, half anxious, half laughing, 'with your importance and your duties? Is it something out of the Roman history that one must resemble, to be a human being?' * * Count Alarik looked at her with an extraordinary emotion. She stretched her hand to him with the most engaging charm, and said: 'Let me be glad in life and in death! God is good; he intends good to us all in joy as in sorrow; why should we not be glad? Let me not see this gloomy seriousness!' Count Alarik did not answer; he pressed the snow white hand to his lips, followed Adelaide with his eyes during the whole evening, but remained silent and thoughtful. Adelaide was grave for a moment, but soon returned to her usual liveliness, and laughed, sung and played with the little ones."

The description of a Swedish spring, and its awakening influence on nature and on man, is a pleasant and life-like picture:—

"It is spring in the north, and all the town-dwellers are bidden as guests to the rural festivity. Veronica and Stellaria embroider the splendid cloth which covers the festive table, the mid-day torch is lighted, the bird with its melodious sighs—'the wandering voice,'—and the lark with its joyous song calls out to the rich woods, to the sunny field; they sing: 'Come, come! Glorious is life in the country!' And the town-gates open, and an innumerable multitude stream out from the confined to the free. Here we see the family calèche with papa and mamma, and little sons and daughters placed amongst the bundles and packets; there the more modest gig, with the father and mother, and the little one who sits squeezed between them; here the stately landau with the 'Marshal of the Court,' the Countess, and the parroquet—where are they all going? To the country—to the country! to estates, and country-houses, orangeries, conservatories, dairies, distilleries, etc. etc. etc. Who can count all the bobbing chaises which carry hungry men ready for dinner out to the inns in the fields? What healths there to the memory of Bellman!* Let us see the foot passengers who wander out of the gates of Stockholm to enjoy life in the beautiful scenery around. Here we have a respectable family of artisans, who go to spread their cloth on the green plots of the Djurgärden; here a couple of lovers who go to pick forget-me-not, and to write their names on the leg of a statue in the park near Drottningholm.† See that elegant family party! ladies with parasols, and gentlemen in frock coats, standing with bunches of lilac in their hands round the great urn at Rosendal, peeping and wondering if the royal family will appear! If you wish to see more finished or more witty sketches, seek for them in Count Hjalmar

"* A favourite comic poet, and writer of comic songs, died in 1769.—M. H."

"† A palace in the lake Mälern, near Stockholm. The summer residence of the Crown Prince, and Princess of Sweden.—M. H."

Mörner; but yet a few more hasty contours of the friendly scenes of spring. Young girls dance with light feet out in the fields, forget all the vanity and show with which their town life had infected them, and flowers amongst flowers, they become simple, beautiful, and faultless as they; they form friendships, they bind wreaths, they praise God, and are happy. Young men swarm out among the woods, the winds, and the waters—the strength, which is streaming through nature, enhances the life in their bosoms; they think the whole world is theirs, every rosy tint of morning, every golden evening cloud, writes for them a promise of victories and glory. And the aged—they go out, supported by the arm of a son, oftener by that of an affectionate daughter, oftener yet perhaps by a crutch; they go out to warm themselves in the sun, to sit on a bench, and hear the song of the birds, and breathe in the fresh air, to rejoice themselves in the sun; the more fortunate amongst them to rejoice themselves in their grandchildren's joy. And the children, the children! O ye little, soft, beautiful, innocent beings, favourites of God and men, the spring seems shaped for you, and ye for the spring; when I see you amongst the flowers, with bright butterflies dancing around you, I wonder what the higher world can yet have lovelier."

These extracts will probably tempt many among our readers to share the pleasures we have felt in reading this pure and truthful record of human life and character. And we shall only add, in justice to Mrs. Howitt, that the translation is, with few exceptions, elegant and easy,—certainly an improvement on her version of 'The Neighbours.'

Tecumseh; or, the West Thirty Years Since: a Poem. By G. H. Colton. New York, Wiley & Putnam.

WE cannot promise Mr. Colton's romance in rhyme a very extensive popularity on this side the Atlantic. Like the 'Yanwyden' of Messrs. Eastburn and Sands, and the 'Zophiel' of Mr. Brookes, it is too diffuse—spreads over too great a surface. There are, probably, few works more creditable to Transatlantic imagination than 'Zophiel'; but though Southey earnestly recommended it to public attention, by whom is it read, or to whom is it known? 'Tecumseh' will, we fear, share the same fate; and yet neither Bryant, nor Percival, nor Sprague, nor Halleck have written anything, of its kind, much superior to the following:—

The Lament.

Where is the foam of the waters?
White on the golden sand it shone:
But a wave from the deep came dark and high—
I looked and the foam was gone!
It might not linger!

Where is the snow-wreath of winter?
Pure in the forest depths it lay:
But the Great Spirit looked from the stormless heavens,
And the snow-wreath passed away
In its own breathing!

Where is the cloudlet of summer?
Palely it slept on the sky's calm breast:
But the winds blew strong and the tempest rose—
The cloud found a darker rest,
No more returning!

Lovely wast thou, my sister,
Gentle and sad as the night's cold breath!
Ah! if thou hadst been less sweet and fair,
Thou wouldst not have charmed cold death
Nor grieved Omeena!

Vain is the voice of my sorrow!
Never again to the earth nor me
Thy spirit returns from the Shadowy Land:
And with tears shall I gaze, like thee,
On stars and flowers!

Yet will I cease from my mourning,
Child of the moon-lit Ocean-foam!
For a captive, and orphan, and lonely in woe,
Manitto hath called thee home,
To meet the long lost!

Soon may I come to thee, dearest!
Sorrow and tears and the tomb are not there,
And the flowers have no fading, the storm never comes,
And joy fills the boundless air.—
Sleep, sleep, thou dreamless!

Other passages might be quoted of equal merit.

List of New Books.—The Principles and Practice of Surgery, by the late Sir A. Cooper, Bart., edited by Alexander Lee, M.A., M.D., Vol. III., 8vo. 18s. cl.—The French Reading Instructor, by G. Surenne, F.S.A.E., 3rd edit. improved and corrected, 12mo. 4s. bd.—Jack's Edition of Life at Sea, being a Series of Letters from an Old Irish Captain of the Head to his Nephew, 12mo. 6s. cl.—The Crisis is Come, with an Appendix, containing the Speeches and Decision of the House of Commons on the Petition of the Church of Scotland, by Rev. B. D. Bogie, 12mo. 3s. 6d. cl.—Horæ Aramaicæ, comprising concise notices of the Aramean Dialects, with a Translation of the Gospel according to St. Matthew and the Epistle to the Hebrews, by J. W. Etheridge, 12mo. 5s. cl.—A Lexicon to Homer, containing all the words in the Iliad and Odyssey, by W. Wittich, 12mo. 7s. cl.—The Artillerist's Manual and British Soldier's Compendium, by Capt. F. A. Griffiths, 3rd edit. 18mo. 6s. cl.—Chambaud's Fables, new edit. by Scott and Wells, 18mo. 2s. cl.—Neilson's Eutropius, with Vocabulary, new edit. 18mo. 2s. cl.—Slade's Plain Parochial Sermons, Vol. V., 12mo. 6s. bds.—The Prophecy on the Mount, by the Rev. Alexander Dallas, 16mo. 3s. cl.—The Church of Christ Pourtrayed, by Rev. C. J. Yorke, 16mo, 4s. cl.—Studies of the New Testament, by a Layman, 2 vols. 8vo. 15s. cl.—Barnes's Notes on the Hebrews, 12mo. 4s. 6d. cl.—Practical Sermons for every Sunday in the Year, by Lady Coffin Greenly, Vol. I., 5th edit. post 8vo. 6s. cl.—The Future States, their Evidences and Nature, considered on Principles Physical, Moral, and Scriptural, by Rev. R. Courtenay, 8vo. 10s. 6d. cl.—The Shadow of the Cross, by the Rev. W. Adams, 3rd edit. 12mo. 2s. 6d. cl.—Jardine's Naturalists' Library, Vol. XXXIX., 'British Fishes, Vol. II.,' 12mo. 6s. cl.; ditto, Vol. XL., 'British Birds, Vol. IV.,' 12mo. 6s. cl.—Jardine's Naturalist's Library, complete, 40 vols. 12mo. 12l.—Steill's Pictorial Spelling and Reading Assistant, 12mo. 1s. 6d. cl.—Steill's Pictorial Spelling-Book, 3rd edit. 12mo. 1s. 6d. cl.—Architectura Canonica, or Canons for Church Architecture, by Philecclesius Ignotus, 12mo. 6s. cl.—Simpson's Traditions of the Covenanters, 3rd series, 18mo. 2s. 6d. cl.—Invalid's Hymn-Book, 4th edit. 18mo. 3s. cl.—Family Essays on the Universe, by A. S. Sligo, 8vo. 10s. 6d. cl.—The Sepulchres of Etruria, by Mrs. Hamilton Gray, 3rd edit. post 8vo. 21s. cl.—A Defence of the Church of England, by Rev. H. Tattam, fc. 8vo. 3s. 6d. cl.—Essays Written in the Intervals of Business, 3rd edit. fc. 8vo. 5s. cl.—Tales of the Colonies, by C. Rowcroft, Esq., 2nd edit. 3 vols. post 8vo. 31s. 6d. bds.—The Burgomaster of Berlin, from the German of W. Alexis, 3 vols. post 8vo. 31s. 6d. bds.—The War in China, by Dr. M'Pherson, with plates, 8vo. 12s. cl.—The Castle of Falkenbourg, and other Tales from the German, square, 3s. cl.—Hints on Ornamental Needlework as applied to Ecclesiastical Purposes, square, 3s. bds.—Odes of Horace, translated by John Scriven, fc. 5s. cl.—The Pictorial Times, Vol. I., 16s. cl.

METEOROLOGICAL JOURNAL for AUGUST, kept by the Assistant Secretary, at the Apartments of the Royal Society, BY ORDER OF THE PRESIDENT AND COUNCIL.

1843.	9 o'clock, A.M.			3 o'clock, P.M.			Dew Point at 9 A.M. deg. Fahr.	Diff. of Wet and Dry Bulb Ther.	External Thermometers.				Rain in inches. Hour at 9 A.M.	Direction of the Wind at 9 A.M.	REMARKS.
	Barometer uncorrected.		Att. Ther.	Barometer uncorrected.		Att. Ther.			Fahrenheit.		Self-registering				
AUG.	Flint Glass.	Crown Glass.		Flint Glass.	Crown Glass.				9 A.M.	3 P.M.	Lowest	Highest			
T 1	30.022	30.016	79.2	29.964	29.956	68.0	58	06.8	62.3	69.3	53.6	76.0		S	A.M. Fine—light clouds and breeze. P.M. Cloudy—stiff breeze. Ev. Fine & starlight. [Ev. Fine & starlight—stiff breeze.
W 2	29.792	29.786	69.8	29.716	29.708	66.3	59	05.8	63.7	61.7	54.6	74.2		S	A.M. Cloudy—stiff breeze—slight rain. P.M. Cloudy—stiff breeze.
T 3	29.638	29.632	70.7	29.624	29.616	64.8	60	05.4	64.0	58.4	56.5	66.7		S	A.M. Cloudy—high wind with showers. P.M. Ovct.—heavy rain, with thunder and lightning. Evening. The same.
F 4	29.586	29.580	63.2	29.600	29.592	65.2	59	04.7	60.4	63.7	57.6	67.4	.633	S	A.M. Ovct.—stiff breeze, with shrs. P.M. The same; at 4, thunder, with rain. Evening, Fine and starlight.
S 5	29.848	29.840	70.2	29.904	29.898	65.6	58	06.2	62.2	66.8	54.4	75.0	.122	W	Cldy.—lt. breeze throughout the day. Ev. Fine & starlight—few clds.
⊙ 6	29.960	29.952	68.9	30.042	30.038	66.0	57	05.1	62.0	68.2	56.8	68.6		W	Fine—lt. clouds & breeze throughout the day. Ev. Fine & starlight.
M 7	30.286	30.278	67.0	30.272	30.264	67.0	59	06.0	66.3	67.7	54.0	79.8		S	A.M. Fine—light clouds and breeze. P.M. Cloudy—light breeze. Evening, Fine and starlight.
T 8	30.302	29.294	67.0	30.252	30.244	68.7	61	06.1	69.3	75.2	61.3	72.2		S	Cloudy—lt. breeze throughout the day. Ev. Cloudy—very slight rain.
W 9	30.136	30.128	75.3	30.058	30.050	71.2	63	06.2	69.2	77.2	63.2	77.0		SSE	A.M. Fine—light clouds and breeze. P.M. Cloudy—light breeze. Evening, cloudy—much lightning.
○ T 10	30.080	30.072	67.3	30.140	30.132	68.2	62	01.7	59.0	63.3	59.3	78.8		NW	Overcast—light breeze throughout the day—slight rain early. Evening, Fine and starlight. [Fine & starlight.
F 11	30.320	30.312	74.7	30.300	30.292	67.0	58	04.8	58.3	68.3	52.5	66.3		N	Fine—nearly cloudless—lt. breeze throughout the day. Evening,
S 12	30.322	30.314	77.6	30.274	30.266	68.6	60	04.9	64.7	72.0	56.0	70.2		NW	Fine—light clouds and breeze throughout the day. Ev. Lightly overcast—light breeze. [Cloudy.
⊙ 13	30.290	30.284	67.5	30.200	30.192	66.8	55	01.5	57.8	70.0	56.5	74.0		NE	A.M. Overcast—lt. breeze. P.M. Fine—lt. clouds & breeze. Ev.
M 14	30.100	30.094	66.0	30.034	30.026	69.0	62	03.1	66.0	73.3	58.4	72.2		E	A.M. Cloudy—light breeze. P.M. Fine and cloudless—lt. breeze. Evening, Overcast.
T 15	29.978	29.970	68.6	29.950	29.944	69.5	64	03.5	65.7	73.3	62.7	74.2		E	A.M. Light fog and breeze. P.M. Cloudy—lt. breeze. Evening, Cloudy—distant thunder—vivid lightning—very slight rain.
W 16	30.052	30.046	69.0	30.066	30.058	68.7	63	03.2	66.8	66.4	63.3	75.2	.019	W	A.M. Cloudy—light breeze and rain. P.M. Fine—light clouds. Evening, Cloudy—few stars.
T 17	30.180	30.127	69.0	30.198	30.190	70.2	63	03.3	64.7	74.7	60.3	69.7	.055	SW	Fine—lt. clouds & breeze throughout the day. Ev. Fine & starlight.
F 18	30.152	30.144	74.5	30.070	30.062	72.6	66	03.0	68.7	78.5	63.2	75.8		N	Fine—nearly cloudless—light breeze throughout the day. Evening, Fine and starlight—few clouds.
S 19	29.898	29.892	83.4	29.808	29.800	74.0	70	02.2	73.2	79.3	63.4	81.2		NE	Fine—light clouds and breeze throughout the day. Evening, Fine and starlight—few clouds.
⊙ 20	29.726	29.720	73.2	29.744	29.738	73.0	68	02.2	70.3	71.0	66.7	81.3		S	A.M. Cloudy—stiff breeze. P.M. Overcast—stiff breeze—slight rain. Ev. Overcast—slight rain. [Fine & starlight.
M 21	30.072	30.064	80.6	30.014	30.006	70.8	58	09.2	59.8	67.2	52.4	74.2	.155	NW	A.M. Fine—lt. clouds and breeze. P.M. Cloudy—lt. breeze. Ev.
T 22	29.702	29.694	68.0	29.584	29.580	66.5	58	07.3	62.3	61.0	56.3	68.7		S	A.M. Overcast—high wind throughout the day—rain early. Ev. Cloudy—few stars.
W 23	29.688	29.680	69.5	29.638	29.632	66.8	58	03.2	62.2	64.3	53.4	70.3	.202	S	A.M. Fine—light clouds and breeze. P.M. Cloudy—light steady rain and breeze. Ev. Overcast—continued rain.
T 24	29.682	29.674	62.6	29.834	29.826	64.7	59	02.2	56.8	65.4	55.0	71.5	1.408	NW	A.M. Lightly overcast—high wind—heavy rain early. P.M. Fine—light clouds. Ev. Fine and starlight.
● F 25	29.910	29.902	70.3	29.888	29.880	65.3	60	05.0	64.2	66.7	55.2	66.5		S	Cloudy—stiff breeze throughout the day. Ev. Cloudy—few stars.
S 26	29.986	29.978	69.2	30.028	30.020	66.7	60	03.3	64.4	69.2	60.9	69.6		S	A.M. Cloudy—light breeze—slight shower early. P.M. Fine—light clouds and breeze. Ev. The same.
⊙ 27	30.208	30.202	63.0	30.156	30.150	65.0	57	01.1	58.0	68.7	55.0	70.5		S	A.M. Overcast—light fog and breeze. P.M. Fine—light clouds and breeze. Evening, Fine and starlight.
M 28	30.058	30.050	63.7	29.984	29.976	65.3	61	02.0	64.3	63.8	56.3	70.3		S	A.M. Overcast—lt. breeze—slt. shower. P.M. Ovct.—stiff breeze. Ev. The same. [Overcast.
T 29	30.040	30.032	67.0	30.062	30.054	68.0	62	03.0	65.2	70.3	63.4	68.3	.036	S	A.M. Overcast—lt. breeze—slt. rain. P.M. Cloudy—lt. breeze. Ev.
W 30	30.180	30.172	66.2	30.174	30.166	67.7	63	04.3	65.6	68.3	63.5	72.0		SW	Overcast—light breeze throughout the day. Ev. The same.
T 31	30.286	30.278	66.3	30.262	30.254	68.7	62	04.5	64.4	71.7	61.7	71.2		E	A.M. Overcast—light breeze. P.M. Fine—light clouds & breeze. Ev. Fine and starlight.
MEAN.	30.015	30.007	70.0	29.995	29.987	67.9	60	04.2	63.9	68.9	58.3	72.5	Sum. 2.630		Mean Barometer corrected ..... 9 A.M. F. 29.908 C. 29.899 — 3 P.M. F. 29.894 C. 29.885

Note.—The daily observations are recorded just as they are read off from the scale, without the application of any correction whatever.

DAYS' EXCURSIONS OUT OF LONDON.

Chiddingstone and Hever.

THE Dover line of Railway traversing the whole weald of the ancient kingdom of Kent, is rich in materials for Days' Excursions, both historic and picturesque, and the Directors of the Company seem fully alive to this feature of their railway, and to its employment for other purposes than those of mere necessity. An attractive placard now decorates the "external paper-hanging stations" of the metropolis, announcing to its smoke-dried passers-by, that the Dover railway line is the "line of pleasure," and each station is made to proclaim the possession of some tempting curiosity, in abbeys, castles, mansions, parks, &c. Besides whetting the appetite for fresh air, the country, and its beauties, this Company, with a good judgment almost peculiar to itself among the metropolitan railways, diffuses the means of reaching them most extensively by its very cheap fares. Instead of making the cheapest mode of conveyance almost useless in consequence of the times of departure—an arrangement in which the Great Western, the Birmingham, and South Western Railways, obtain an ungracious pre-eminence—and as uncomfortable as possible, the Dover Railway, to its credit, causes its third-class carriages to start at all hours of the day, and also makes them comfortable. Well provided with roomy seats, and a bright sun over head, the third class carriages are delightful; but do not subject yourself in them to rain—made mercilessly penetrative by rapid motion. The fares on this line are cheap by all its carriages. In the third class you may reach Tunbridge, a distance of about forty miles, for half a crown, and Penshurst, the station at which the present day's tourist will deposit himself, for one shilling and ten pence! Not to withhold credit where due, we should acknowledge that the Brighton Railway Company has seen the error of its ways, and recently regulated both its fares and general arrangements, after the good example of the Dover company. But owing to the extortion of the Greenwich Railway, third-class passengers are not brought into London, and only to New Cross station. To travellers from the west end of the metropolis, there is no inconvenience in this—passengers for every train are conveyed from Cockspur Street and Gracechurch Street to the New Cross station for sixpence. When we have uttered a lamentation at the dire necessity which compels us on this line to pass through two long tunnels, at Merstham and Godstone, which only the first-class carriages make less intolerable, we have told the tourist all that we think necessary relating to the travelling department of his day's excursion.

In about an hour and a half, we arrive at the Penshurst station. If unable to manage a walk of nearly seven miles, then stop at Edenbridge, the station before Penshurst, where a carriage may be hired. From Penshurst station we ascend a deliciously shaded lane which separates the grounds of Redleaf from the park of Penshurst. It is a lane well worth all the journey to behold and saunter in: and the stout rustic cottages erected by Mr. Wells in the lane make us long for the privilege of seeing further evidences of good taste in his pictures and gardens at Redleaf—but alas! as strangers, it is denied to us. On the present occasion we shall not stray into the park of the Sidneys—but having followed the lane until we have passed the entrance to Redleaf on the west, and descended the hill until we are in sight of the house at Penshurst, we reach some stone steps which rise abruptly on the west side of the road and cross the stile at the summit of them. Here we are in the midst of quiet pastures, and a walk of a mile and a half over them, crossing in our way the river Eden, which some maps call the Medway, brings us to the village of Chiddingstone, a village consisting of some half-dozen old timber houses of the sixteenth century, in as perfect and picturesque a state as heart of painter or antiquarian could desire. The house of our Master Brooke, a general chapman, is just the genuine model to suggest impressions of what the house of his namesake in the Merry Wives of Windsor must have been. We almost looked to see sweet Anne Page tripping from beneath the shade of the gabled porch. Master Brooke is proud of his residence, as well he may be, and civil too, for he invited us to see the panelled parlour, remaining almost untouched since its first erection. Adjoining Brooke's house is an inn of a similar architecture, in the tidiest order and attractive peacefulness. One or even two beds may be had: and what a world of good it would do to many, just to travel here for a night's lodging, and up to business again by the railway the next morning. It might be managed, ride and all, for ten shillings. The church, which is opposite the old houses, is of a later "decorated" style, but is kept too orderly and respectable to have much picturesque attraction.

This pretty village is situate just on the junction of the clay, called the Oaktree clay—a slaty and strongly bituminous compound, similar to that at Kimmeridge—and the sand. We keep along the base of the sand hills in order to reach Hever. It is about two miles distant, and during the whole walk the spire of Hever Church and the square turrets of Hever Castle appear above the foliage which environs them in the valley below. The tradition has come down to us, that on these hills watchmen were stationed, to announce by sound of bugle the approach of the lusty and royal suitor to Anne Boleyn, as, gallopping from Eltham and Greenwich, he descended the opposite sand hills. It was with reference, probably, to his excursions hither, which court babblers might disclose to inquisitive partisans of the injured and neglected Catharine, that Majesty desired its rovings might be unseen. The "Statutes of Eltham," as they are called, enacted that the "officers of his privy chamber shall be loving together, keeping secret every thing said or done, leaving hearkening or inquiring where the King is, or goes, be it early or late, without grudging, mumbling or talking of the king's pastime, late or early going to bed, or any other matter." Harry cared little for the bruiting of his ordinary indulgences, with which the public was familiar—but he had reasons, whilst his divorce was in progress, not to create popular enmity against the lady he had already destined as Queen Catharine's successor.

A rude little inn at Hever, which perpetuates in its sign the name and effigy of Henry the Eighth, will supply a sort of dinner, if hunger ensues before reaching Edenbridge: in that case give timely orders before visiting the castle, so that the meal may be ready as you pass the inn on your return, which you must at all events do, in order to reach Edenbridge. The only object of interest in Hever Church, is a fine and perfect brass on an altar tomb erected in the chancel, to the memory of Sir Thomas Boleyn, Anne's father.

The Castle lies contiguous to the river Eden. Hasted records a traditionary saying that—

> Jesus Christ never was but once at Hever,
> And then he fell into the river.

The meaning of which is supposed to allude to the carrying of the host across the river, and its falling from the priest's hands.

The founder of Hever Castle was one William—a Kentish sheriff, in the time of Edward the Third, who took his name, Willielmus de Heure or Evere, from the place. He rebuilt the old mansion, and having obtained the royal licence to embattle the new structure, he converted the same into a castle. This estate came into the possession of the Cobham family, and was distinguished as Hever Cobham. Sir Thomas Cobham sold the estate to Sir Geoffry Bulleyn, a wealthy London mercer, and it continued in possession of the Bulleyns until after Anne's execution, when her grasping consort seized it to grant it as a residence to another of his discarded wives, Anne of Cleves. The castle had been surrounded by a park, but in the reign of Philip and Mary it was disparked.

Independently of its connexion with the romantic fate of Anne Boleyn, this comparatively mean castle is worth half the show houses in England, as bringing vividly before us all the rudeness and discomfort of past days. It has almost entirely escaped the wreck of the modern spoiler, and has thus retained the most essential characteristic of its original state. Its natural position—low and marshy—would alone suggest fears of malaria, and these are strengthened ten-fold by the dank, green-skimmed, fœtid moat, which still surrounds the castle. So that the precautions which our ancestors took, to keep out an occasional foe placed them in the presence of a more deadly and insidious one at all times. The drawbridge has been supplanted by a permanent roadway, and the ivy luxuriates over the broad-shouldered archway; but in other respects the southern or principal front appears much in the same state as it must have been when Harry was accustomed to pass beneath its portcullis. Since its original construction in Edward the Third's time, some few gradual changes in its exterior, tending to transform it from a fortress to a domestic residence, may be traced by an observant visitor. The insertion of windows generally throughout the exterior—especially square-headed ones, identifying extensive changes with the Tudor times, and the panelled buttresses at the south front are all evidences of this tendency. Passing through the gateway we entered a small low quadrangular court, at no time very ornamental, but less so at present by the coatings of whitewash which have hidden the chequered markings of the timber work. The surrounding apartments are lighted by square-headed and mullioned windows. Opposite to the entrance is a passage which takes us into the ancient hall now used as a kitchen, but remarkable for nothing but its rude construction. The old kitchen offices were close to the hall, very dark, dirty and gloomy, little resembling the *cuisine* of a modern nobleman, with its apt and delicate knick-knackeries. We are led up a rude staircase into several small and low rooms, still preserving their oak panelling, and uneven and imperfectly joined oak floors—suggestive of draughts and cold at every crevice, even when littered daily with straw, as the chambers of royalty were accustomed to be. The chamber assigned traditionally to Anne Boleyn, contains an ancient bedstead with yellow silk furniture, and remains almost untouched, and hence apparently unused. But Anne of Cleves' bed-room has been papered with a blue modern paper, and is now inhabited. Mounting up a narrow rude staircase we enter the long gallery extending along the upper part of the north side of the castle, formerly used for general assemblages and meetings of revelry. The sides are lined with oak panels. The garret-like ceiling is very low, almost within arm's reach, and exhibits the bare rafters which support the roof. At the upper end is a raised recess, in which Harry whispered his soft small-talk to his lady love. This gallery, excepting the filling up of one of its windows, remains entirely in its original state. As a climax, you are conducted to another room across the court-yard on the south side, which has been restored in late times; but its restorations make it far less real than the long gallery we have just spoken of. There are ample subjects for the sketcher's portfolio to be met with throughout this castle and its adjacent parts, not forgetting the old stabling we pass on approaching it.

That Hever Castle was the residence of Anne Boleyn, several times during her eventful life, cannot be questioned. Whether it can claim to be her birthplace, as some say, admits of much doubt, for both Rochford Hall, in Essex, and Blickling Hall in Norfolk, assert similar claims. The latter place, indeed, on the authority of Spelman, a Norfolk man, was "once the seat of the Boleyns, from whence sprung Thomas Boleyn, Earl of Wiltshire, and Ann Boleyn, the mother of the divine Queen Elizabeth. To Blickling was decreed the honour of Anne Boleyn's birth." After the death of her mother, which took place in 1512, Anne resided at Hever with a French governess named Simonette, who taught her music and needle-work. "Besides all the usual branches of virtuous instruction, they gave her teachers in playing on musical instruments, singing, and dancing, insomuch that when she composed her hands to play and her voice to sing, it was joined with that sweetness of countenance, that three harmonies concurred; likewise when she danced, her rare proportions varied themselves into all the graces that belong either to rest or motion." When Anne returned to England from France, whither she had gone in the suite of Mary, the King's youngest sister, who had been forced to marry Louis XII., she took up her residence at Hever, and it is related that her first meeting with the King after her return, was in the garden surrounding the castle. To what good account she turned this early education, in after times, a contemporary biographer shall tell: "She possessed a great talent for poetry, and when she sung, like a second Orpheus, she would have made bears and wolves attentive. She likewise danced the English dances, leaping and jumping with infinite grace and agility. Moreover, she invented many new figures

and steps, which are yet known by her name or by those of the gallant partners with whom she danced. She was well skilled in all games fashionable at courts. Besides singing like a syren, accompanying herself on the lute, she harped better than King David, and handled cleverly both flute and rebec (a small violin). She dressed with marvellous taste, and devised new modes, which were followed by the fairest ladies of the French court, but none wore them with her gracefulness, in which she rivalled Venus." (Count Chateaubriand's MS.) Henry told Wolsey "he had been discoursing with a young lady who had the wit of an angel, and was worthy of a crown." Wolsey answered, "it is sufficient if your majesty finds her worthy of your love." Henry replied, "that he feared she would never condescend in that way." "Great princes," rejoined Wolsey, "if they choose to play the lover, have that in their power which would mollify a heart of steel." Two sketches of her portrait, drawn by opposite partisans of her cause, will not be inappropriate to a visit to this spot, Anne's chief residence. Saunders, who was not likely to be over-flattering, describes her as "tall, slender, with an oval face, black hair, and a complexion inclining to sallow; one of her upper teeth projected a little. She appeared, at times, to suffer from asthma. On her left hand a sixth finger might be perceived. On her throat there was a protuberance, which Chateaubriand describes as a disagreeable large mole, resembling a strawberry; this she carefully covered with an ornamental collar-band, a fashion which was blindly imitated by the rest of the maids of honour, though they had never before thought of wearing anything of the kind. Her face and figure were, in other respects, symmetrical: beauty and sprightliness sat on her lips; in readiness of repartee, skill in the dance, and in playing on the lute, she was unsurpassed." The next sketch is from the life of Anne, supposed to have been written by George Wyatt, the sixth son of Sir Thomas Wyatt, executed for rebellion in Mary's reign, who died at Bexley in Kent in the year 1624. "In this noble imp, the graces of Nature, adorned by gracious education, seemed, even at the first, to have promised bliss unto her in after times. She was taken at that time to have a beauty, not so *whitely* as clear and fresh above all we may esteem, which appeared much more excellent by her favour passing sweet and cheerful, and was enhanced by her noble presence of shape and fashion, representing both mildness and majesty, more than can be expressed. There was found, indeed, upon the side of her nail, upon one of her fingers, some little show of a nail, which yet was so small, by the report of those that have seen her, as the workmaster seemed to leave it an occasion of greater grace to her hand, which, with the tip of one of her other fingers, might be, and was usually by her, hidden without the least blemish to it. Likewise, there were said to be upon some parts of her body certain small moles, incident to the clearest complexions."

After the breaking of Anne's engagement with Percy, she dwelt at Hever, and was visited by the King there, and also, it is said, by her old playmate, Sir Thomas Wyatt, who, as possessor of Arlington Castle on the banks of the Medway near Maidstone, was her father's neighbour, distant little more than a morning's ride. But the poetical knight was a married man, and could only address woeful ballads to his mistress:—

> What word is that, that changeth not,
> Though it be turn'd and made in twain?
> It is mine ANNA, God it wot
> The only causer of my pain,
> My love that meedeth with disdain.
> Yet is it loved, what will you more?
> It is my salve, and eke my sore.

Were there space at command, we would also quote his "Description of such a one as he would love." This, and his other songs and sonnets, the reader may find collected in one of the *Aldine* volumes.

George Wyatt gives us a scene of rivalry between his relation, Sir Thomas, and the King, about the Lady Anne:—"About this time, it is said, that the knight, entertaining talk with her as she was earnest at work, in sporting wise caught from her a certain small jewel hanging by a lace out of her pocket, or otherwise loose, which he thrust into his bosom; neither with any earnest request could she obtain it of him again. He kept it, therefore, and wore it after about his neck, under his cassock, promising to himself either to have it with her favour, or as an occasion to have talk with her, wherein he had singular delight, and she after seemed not to make much reckoning of it, either the thing not being much worth or not worth much striving for. The noble prince, having a watchful eye upon the knight, noted him more to hover about the lady and she the more to keep aloof of him; was whetted the more to discover to her his affection, so as rather he liked first to try of what temper the regard of her honour was, which he finding not any way to be tainted with those things his kingly majesty and means could bring to the battery, he, in the end, fell to win her by treaty of marriage, and in this talk took from her a ring, and that wore upon his little finger; and yet all this with such secrecy was carried on, and on her part so wisely, as none, or very few, esteemed this other than an ordinary course of dalliance. Within few days after, it happened, that the King, sporting himself at bowls, had in his company (as it falls out) divers noblemen and other courtiers of account, amongst whom might be the Duke of Suffolk, Sir F. Brian, and Sir T. Wyatt, himself being more than ordinarily pleasantly disposed, and in his game taking an occasion to affirm a cast to be his that plainly appeared to be otherwise; those on the other side said, with his grace's leave, they thought not; and yet still he pointing with his finger whereon he wore her ring, replied often it was his, and specially to the knight he said, Wiat, I tell thee it is mine, smiling upon him withal. Sir Thomas at the length, casting his eye upon the King's finger, perceived that the King meant the lady whose ring that was, which he well knew, and pausing a little, and finding the King bent to pleasure, after the words repeated again to the King, the knight replied, and if it may like your Majesty to give me leave to measure it, I hope it will be mine; and withal, took from his neck the lace whereat hung the tablet, and therewith stooped to measure the cast, which the King espying, knew, and had seen her wear, and therewithal spurned away the bowl, and said, It may be so, but then am I deceived; and so broke up the game. This thing thus carried, was not perceived for all this of many, but of some few it was. For the King, resorting to his chamber, showing some discontentment in his countenance, found means to break this matter to the lady, who, with good and evident proof how the knight came by the jewel, satisfied the King so effectually, that this more confirmed the King's opinion of her truth than himself at the first would have expected."

During the "sweating sickness" Anne was sent for security to Hever, a place likely enough to encourage the epidemic; "As touching your abode at Hever," writes Henry, "you know what aire doth best suit you; but I would it were come to that, thereto if it please God, that neither of us need care for that, for I assure you I think it long." The love letters which Henry addressed to her at Hever are the last positive evidences we find of Anne's connexion with the spot, and with a short extract from one of them we take our leave of Hever: "In order to remind you of my affection and because I cannot be in your presence, I send you the thing which comes nearest that is possible, that is to say my picture, and the whole device, which you already know of, set in bracelets, wishing myself in their place when it pleases you."

Near to the castle on the north-west, is an old farm house, called "Polebrooks," which is worth walking to see for its picturesqueness. If the promised accommodation at the Royal Harry at Hever was not sufficiently tempting, then the tourist may take a pretty green lane walk about two miles further on to Edenbridge, where he will meet with treatment a few degrees more civilized; within a mile of this village the railway has a station.

OUR WEEKLY GOSSIP.

Captain James Ross has returned from his voyage of discovery to the South Seas; but the amount and nature of the information obtained has not transpired. It is currently reported that he is not long to enjoy his ease at home, but is shortly to proceed on another government expedition, to attempt a north-west passage, or at least a North Polar survey.

Captain Harris, who has just returned from a mission to Shoa in South Abyssinia, is about to publish his travels. Captain Harris started from Tajoura, and proceeded in a south-westerly direction to Ancobar, the capital of Shoa: he then made several detours to the S., S.W., and N.W., and collected, it is said, much information respecting a country, previously little known, called Susa, which lies to the south of Kaffa and Enarea; and returned to Tajoura by a different route. He brought with him a jet black mule with magnificent trappings, sent by the King of Shoa as a present to the Prince of Wales, several specimens of Abyssinian arms, &c.. and an illuminated letter to Her Majesty in the Arabic language.

The lessees of the Patent Theatres are bestirring themselves, and preparing for the ensuing campaign; and, if we may infer their probable course of operations from the forces which they are mustering, Covent Garden will be the stronghold of the legitimate drama, and Drury Lane the camp for opera and ballet. Such an arrangement would benefit all parties: the different classes of entertainments might thus be supported by the best available talent, and produced in the most complete and finished manner; for it is only by the nearest possible approach to perfection in the *ensemble* that the public can now be attracted to theatres. How the new Act will affect the Patent and Minor houses yet remains to be seen; and its influence, if any, on the drama, time alone can show: the operation of the new law must be felt before its working can be tested, for it will either be beneficial or injurious, according as it is administered. Its condemnation is, we think, certain, and consequent on the fact that it gives despotic power over the literature and property of the stage to a court functionary, the Lord Chamberlain (a personage not appointed on the score of his superior wisdom),—or rather to his deputy, who is still less amenable to public opinion; while the amateur Justices of quarter sessions, country squires, and parsons, hold the issues of life and death of the provincial stage and its managers. This is said to be an act merely "declaratory" of former acts, simplifying and improving obsolete and cumbrous legislative forms; and inasmuch as it is more intelligible, and no longer classes actors with "rogues and vagabonds," it is an improvement: moreover, it allows the minor theatres to play Shakspeare; a preposterous clause, prohibiting the performance of Shakspeare's plays within five miles of either of the Patent Theatres, having been very properly withdrawn. Still, if it does not actually impose new shackles on the drama, it substitutes for the old clumsy bonds a new set of fetters, whose restrictions will be more galling. It confirms the vicious principle of a Censorship of the drama, which would not be tolerated if applied to any other kind of literature, or to the newspaper press; and this at a time when public opinion has discountenanced performances which the Lord Chamberlain had sanctioned. If public decency or morality be violated, there exists in audiences the power and the will to repress the offence; while the Chamberlain and magistrates can only meddle in a mischievous manner: besides, the licenser's objections have generally been of a kind to provoke ridicule. Practically, his interference has been an affair of feegathering. All classes of the theatrical community —patent proprietors and minor managers in town and country—authors and actors—are opposed to the new Act, and we think with just cause. What literature can flourish under a despotism; a despotism not the less pernicious because it does not appear formidable? What property is safe when the warrant of any four country magistrates, or the veto of a court officer, can shut up a theatre, and ruin managers and actors by large fines? Why the mere amount of security required of a manager—namely, two good sureties resident in the neighbourhood for 250*l.* each, —is enough to prevent many a respectable man from opening a provincial theatre. Where is a country manager to find such bail under such liabilities, and with a capricious and irresponsible power impending over his fortunes? We have been astonished at the tacit acquiescence of the newspaper press in such a law; and have ceased to wonder at the indifference of the House of Commons to any no-party measure.

An exhibition has just been opened at the Egyptian Hall, Piccadilly, of a model of the city of Venice, said to be on a scale of one 540th part of its real dimensions, and to represent every object, however minute; amongst them 102 churches, 122 towers, 340 bridges, 135 large palaces, 927 smaller palaces, 471 canals, &c. together with 18,479 private houses!

Allowing for some little perplexity consequent on the multitude of objects on so small a scale, the modellers are entitled to great praise, and the work will give a pleasant idea of this city of palaces to those who have never had the good fortune to visit it, and revive for those who have, many plesant recollections. The larger buildings are very accurately modelled. It is illuminated by a novel artificial light, which has an excellent effect.—A letter from Venice, in the French journals, mentions that "the construction of the bridge, which is to connect the city with the main land, is urged on with great activity. Of thirty-four arches, which it is to have, twenty are already completed, and, to all appearances, this gigantic undertaking will be entirely finished before the end of next year. A new section of the Venice and Milan railway has been commenced—from Milan to Steriglio—so that at present three portions are going on simultaneously. A company, of which the greater number of the members reside at Venice, has obtained permission to prolong to Bergamo the Milan and Monza line."

The exhibition of pictures this year in Dresden is said to surpass most of the previous ones. Five cartoons by Prof. Schnorr and a picture by Bendemann are very highly spoken of.—Respecting Art in Belgium, we have a few words from a Correspondent. "Though on a route more beaten than the old Bath road, on which the swarms of English, by their numbers, their impatience, and their noisy curiosity, remind me of the simile of Burns,

As bees bizz out in angry fyke,

you may still like to have a paragraph on art in Antwerp, especially about the new statue of Rubens. The ample richness of this seems suitable to the place and the man: rarely have the sumptuous undulations of velvet and satin been better turned into bronze; the expression, too, of the features is noble, the pose of the figure easy. In short, comparing this effigy with the new Albrecht Durer at Nuremburg, or the new Mozart which I saw in the Stiglmayr foundry at Munich,—I think the grace of propriety preeminently attained in this portrait statue. To be sure, the gorgeous splendour of Sir Peter Paul is an easier thing to present in these our days, than the more highly elevated spirituality of the old German, while his robust manly beauty offers a more tempting subject than the feeble if not inexpressive traits of the musician of Salzburg. But I was still more favourably struck by the present condition of Flemish Art, while going through the collection of modern pictures, now open in Antwerp. I am familiar with our own provincial exhibitions, and have seen one or two in the German capitals and smaller towns; but I think in some respects this show may challenge the best of its competitors. The young Flemings have come nearer their glorious predecessors, than either the young Germans, or the young French, or the young English. There is much trash: but among it one or two gems. It would be hard to name the contemporary, for instance, who could have painted a more interesting picture on Peter the Great at Saardam, than Prof. Wappers, the director of the Antwerp Academy. De Keyser seems to be forsaking his first forcible choice of subjects, for more graceful and thoughtful combinations. He has a Tasso reading his verses to Eleonora, a Raphael and Fornarina: the last really an exquisite *tableau de genre:* and all the three works I have mentioned are executed with brilliancy and solidity of colour—equally clear of lacquered tameness or audacious flourish—most worthy of honour, and carrying down to our days, something of the old gorgeousness of the land, and its school. This is as it should be; worthy and characteristic. Some of the smaller pieces reminded me honourably of Mieris, and Terburg, and Maas: none, however, shared the coarseness, which, by fits, visited all these clever artists. The landscapes were bad: and I was proud to see, that in a cattle piece Paul Potter's successors are distanced by our own Sidney Cooper. One or two French artists, also, have contributed to this show: I may name MM. Collignon and Lepoittevin, though the nationality of their tones of colour made their pictures look by comparison far more leaden at Antwerp than at home."

A bronze statue, cast after a model by Schwanthaler, of the Margrave Frederick of Bayreuth, has lately been executed, at the command of the King of Bavaria, and sent to the university of Erlangen, of which the Margrave was the founder. Two models of statues by Teneroni, one of the present king of the Two Sicilies, and the other of Bolivar, have been sent from Rome to Munich to be cast in bronze by Stiglmayr.—The statue of Bichat, the celebrated physician, and author of *Recherches sur la Vie et la Mort*, was inaugurated on the 25th ult. at Bourg, with great pomp. Bichat is represented contemplating the movement of life in an infant, whilst at his feet lies a half-dissected body.—The statue of the Abbé de l'Espée, the founder of the institution for the Deaf and Dumb, was last week inaugurated at Versailles with great ceremony.

The Annals of last year's proceedings of the Archæological Institution of Rome have been recently published, and contains drawings and description of the Temple of Mount Ocha, near Carystus, in Eubœa, communicated by Professor Ulrichs, of Athens. This temple is generally believed to be the oldest and best preserved specimen of the kind in Greece, and is particularly remarkable for the massiveness of its walls, and the peculiar structure of its roof. The prize proposed by this Academy in 1842, for the best essay on the Coinage of Italy, has been gained by Dr. Achille Gennarelli, author of the text of the 'Museo Gregoriano.' He opposes many of the opinions advanced in the work published by Marche and Tessieri, under the title of 'Aes grave del Museo Kircheriano,' which, although up to this time the standard work on Italian coinage, was yet so faulty as to induce the Archæological Society to propose a prize for another on the same subject.

The daily papers announce the death of the Rev. James Tate, Canon Residentiary of St. Paul's, but far better known as late master of Richmond school, Yorkshire. He was a sound scholar, an excellent preceptor, and an amiable man. He published some useful works, amongst which the best known are his *Greek Metres*, *Horatius Restitutus*, and the *History of St. Paul.*

This, though the dull season in the publishing world, is often one of promise,—but as yet these blossoms come forth but sparingly. The Messrs. Longman, however, announce as in preparation—'Lord Jeffrey's Contributions to the Edinburgh Review'—'Laing's Chronicles of the Kings of Norway'—'The Life and Times of Richard III. as Duke of Gloucester, and King of England,' by Caroline A. Halstead—a new volume of 'Howitt's Visits to Remarkable Places':—and amongst illustrated works, Richardson's 'Effigies in the Temple Church.' The promised 'Fac-similes of the Prize Cartoons' we mentioned heretofore; but may add, that the ten additional prize cartoons are about to be published by Mr. Maclean. While on this subject, we may mention that the prize cartoons will be exhibited, in the course of a few days, in the Suffolk Street Gallery. The unsuccessful competitors have also, it is reported, resolved to exhibit their works, but are divided between the merits of the Pantechnicon and the Pantheon as the more appropriate locality.—The Rev. J. Allen's 'Diary of a March through Scinde and Affghanistan,' may shortly be expected from Messrs. Hatchard; and from Mr. Murray, Barrow's 'Life of Admiral Sir F. Drake'—Sir G. Wilkinson's 'Modern Egypt and Thebes'—Stisted's 'Letters from the Bye Ways of Italy'—Murchison's 'Russia in Europe and the Ural Mountains Geologically Illustrated'—Gruner's 'Fresco Decorations and Stuccoes of Churches and Palaces in Italy,' and Phillips's 'Figures of British Belemnites.' Mr. Van Voorst promises an illustrated edition of Bloomfield's 'Farmer's Boy,'—Professor Ansted's 'Geology, as a Branch of Natural History, and in its Application to the Arts,'—Mr. Garner's 'Natural History of the County of Stafford'—and Miss Mary Roberts announces a work on Ruins and Old Trees associated with memorable events in English History.

DIORAMA, REGENT'S PARK.

NOW OPEN, with a NEW EXHIBITION, representing the CATHEDRAL of NOTRE DAME at Paris, with effects of Sunset and Moonlight, painted by M. REMOUX, and the BASILICA of ST. PAUL, near Rome, before and after its destruction by Fire, painted by M. BOUTON. Open from Ten till Six.—N.B. A GRAND MACHINE ORGAN has been constructed expressly for this Exhibition, by Messrs. Gray and Davison, of the New-road, and will perform the Gloria, from Haydn's Service, No. 1, during the midnight effect of the Cathedral of Notre Dame.

MUSIC AND THE DRAMA

NEW PUBLICATIONS.

The People's Music-book; consisting of Psalm Tunes, Sacred Music, Songs, Duetts, Trios, Glees, &c., principally arranged for Four Voices, with Accompaniments for the Organ or Pianoforte, by James Turle, Esq., Organist of Westminster Abbey, and Edward Taylor, Esq., Gresham Professor of Music. Part I.—Especial care should be taken that cheap food should also be wholesome; whereas the people of England are here invited to a banquet, the staple viands of which are sometimes of doubtful quality, and generally badly cooked. We cannot understand why Handel's noble Hundred and Fourth Psalm should be transposed a tone; wherefore such tabernacular melodies as 'Shirland' and 'Silver Street' should be again issued; or how the carelessness in adapting the text to the psalmody, which allows such accentuation as "Jeĭsŭs," "Merĭcȳ," is to be excused. The secular moiety of the work contains our old favourites, 'Ye spotted snakes,' 'Come unto these yellow sands,' &c. Dowland's madrigal, 'Awake, sweet love,' is more welcome to us, because less hackneyed. As regards accompaniment, a want of system is observable: the glees have none—the madrigal none: while in Professor Taylor's *trio* for three female voices, the vocal parts are all but literally doubled on the pianoforte. Nothing in the way of taste can be worse than this.

The next publication is more interesting, being none other than a re-issue of *The Music in Shakspeare's Macbeth, with an Accompaniment for the Pianoforte*, by Mr. E. J. Loder, *and a Historical Preface*, by Mr. Rimbault.—This preface gives a superior value to the present edition over its predecessors, since Mr. Rimbault adduces in it reasons why, in despite of Playford's explicit allusion, in his 'Roscius Anglicanus,' to Locke, as the author of the music in Macbeth, John Eccles may possibly have been the original composer. A MS., it appears, exists, bearing the name of the latter, the authenticity of which is not disputable; and in this the familiar airs, choruses, &c., are found in a more imperfect shape than they wear at present. "We have no hesitation," continues Mr. Rimbault, "in pronouncing it to be the original sketch; and that what has been, and still is, received as Matthew Locke's, is a more finished and skilful adaptation of the same work." He throws out a further hint, based on a score extant in Purcell's handwriting, that England's greatest genius may also have had a hand in enriching and polishing the music, which becomes plausible, when we recollect the unscrupulous nature of all theatrical proceedings, from the days of the Cibber-*isms* committed against Shakspeare, to the recent attacks of the patchers and innovators upon Handel's perfect and symmetrical 'Acis.' The question will furnish pretty matter of controversy to the antiquarians. We are glad of the facts, and glad of the music in so complete a form. It is one of our most interesting monuments. To profess, however, the ecstatic admiration of it, which Englishmen are expected to feel, would be hypocritical. We have never heard it produced even on the stage without a renewed impression, that the melody was equalled by the monotony. One key (with the solitary exception of the very short chorus, 'Put in all these,') pervades the composition throughout. The tune, however, 'Let's have a dance,' is unique, and stands out in such bold relief from the rest, that we may be forgiven, perhaps, for also propounding *our* antiquarian query, and suggesting whether, seeing that changing and amending were then, as now, the order of the day, this may not have been a genuine English melody of a date anterior to that of Eccles, Locke, or Purcell? Sixty years hence the Rimbault of our children may have lost sight of the original Sicilian tune in Bishop's 'Home, sweet home'; or of the snatch of the Roman litany, on which Rossini's 'Di tanti' is founded; and this in spite of the *Athenæum*. Perhaps the place which this work deserves to hold in European composition, will be best apportioned by comparison. We would recommend all curious in the matter to turn from Locke to Lulli,—say, the 'Atys' of the latter; and we think that for variety, science, and originality, the witty *aide-de-cuisine* of Mdlle. de Montpensier must be allowed to carry off the palm. An English writer had need, however, wear an invisible gar-

ment of mail, after having put such a heresy in print.

Let us try if we can make our peace over a heap of modern English songs. The first are two from Mr. Hatton's operetta, 'The Queen of the Thames,' —*The Skylark*, a *polacca*, for Miss Romer, and *Away to the Silvery Stream*, a ballad, for Mr. Phillips. To appreciate the true value of the first, perhaps, it ought to be compared with the *polaccas* formerly sung on the English stage by Braham and Mrs. Dickons, and held in high esteem; or with the more sterling, but still rather vulgar compositions, 'Go, trifler, go,' and 'Tyrant! I come,' composed by Bishop, for the favourite Stephens or Tree of the hour. Whether as regards melody, musical structure, or display of the singer, if thus measured, 'The Skylark' deserves a place among English *bravuras*: but that the day of these and of English opera, as then understood, is gone by, Mr. Hatton knows as well as his critics. It is neither by emulating the puerilities of an obsolete school of writers, nor by pedantically aping the crudities of German science, (its one objectionable portion,) that our national composers can raise themselves to the place they so warmly desire to fill. Though the line to be taken is not easy to define, it might, we think, be found.

Mr. Benedict often gives us fair specimens of the skill with which a foreigner may adapt himself to the genius of our language, and the taste of our public, without loss of caste: his '*Alone*,' however, is not one of his happiest efforts.—Mr. E. J. Loder, too, has shown more than once how a few of the secrets derived from foreign training may enrich the meagre style of the old Vauxhall ballad; but the strain upon his invention is too perpetual: though his cleverness peeps out even in such a trifle as the *rondo, Over hill, over dale*, from the Tempest. His *Song of the Water King* is after a worse pattern—that of the *bow-wow* English bass song; and is far surpassed by many a dozen of its forgotten predecessors,—we need but instance one, Bishop's 'O firm as oak,' from 'The Englishmen in India.' But a yet stranger task has been exacted from Mr. Loder, in which he is associated with Mr. Barnett and Mr. Knight. What is to be said to these *Songs from the Text of Shakspeare*, containing 'She never told her love,' diluted into Haynes-Bayly-namby-pamby; and another serenade to Imogen, done by Mrs. Crawford? We must positively give a verse from the latter, else the fact of such a piece of audacity having been committed would hardly be credited. Thus, then, is 'Hark! the lark' amplified—

> Sweet Imogen, awaken!
> The air blows fresh and free;
> The spousal morn hath taken
> Her bridal blush from thee:
> The chalic'd lilies borrow
> The whiteness of thy brow,
> And as in gentlest sorrow,
> Their flexile heads they bow.

Whether such productions are most discreditable to rhymester, musician, or publisher, we leave others to decide;—hoping that no singer will be found to make a fourth in the speculation. We must close the notice of new English Songs, by announcing the publication of *The Happy Day*, a ballad, by Mr. Knight; and by saying that *Oonagh's Grave* and *The Maniac* will hardly sustain the popularity won for their composer, Mr. Crouch, by his sweet melody, 'Kathleen Mavourneen.'

Two grand *scenas* from Pacini's 'Sappho'—*No more from thee divided*, and *Morning has never dawned*, —would serve as text for a homily on versions of foreign words to music, were this the place. Enough to express our conviction, as a general principle, that no words translated from verse will sing comfortably or sound naturally, except they be translated *into* verse,—a canon applicable to the irregular lines of a recitative as well as to the coquettish rhythms of a *cabaletta*. There are few specimens so licentiously irregular, or so *instrumentally* formal and piquant, as to defy those who bring to their task mastery over language, music, and versification—*vide* Moore's 'National Melodies,' where the quadrille, the *ländler*, the *seguidilla*, the *modinha*, the *barcarole*, nay, even the *scherzo* of Beethoven, have been mated to words as easy to say and sing harmoniously as most combinations of Italian liquids. Those who attempt the task, would do well to study the command of language and metre (in particular the employment of the final double syllable, and of *tempo rubato*,) exhibited in 'Hudibras.' Seven years ago, in this Journal (No. 456), an able writer extolled Butler as one of our most consummate versifiers. The article is well worth the careful consideration of translators, even such as aspire no higher than the "*felicita*" or "*speranza*" of Romani's and Rossi's *libretti*, but who still mean to execute their duty well.

From these hints, to which we will not on the present occasion give special application, we glide naturally to two *Duetti di Camera*—*La Gita in Gondola*, and *La Zingarella*, by Giovanni Maraviglia. Though these are not equal to Gabussi's chamber duets, being less workmanlike, they are still elegant, and will prove as agreeable to sing as to hear. In *O care Tenebre*, an *ariette* for a contralto, Signor Maraviglia has somewhat too shamelessly appropriated a well-known phrase from Mozart. But we fear the "*Maestro*" is generically unscrupulous:—Rossini and Bellini "conveyed" phrases of sixteen bars' length whenever it so pleased their indolence.

Not so our trusty and well-beloved cousins the Germans! whose resolution to be original not unfrequently leads to a stiffness and eccentricity anything but engaging in song-writers. With the exception of Weber and Schubert, we cannot call to mind one who has distinguished himself in this capacity, without a certain infusion of southern *disinvoltura* to soften the stubbornness of his nationality. Evidence to this point will, we think, be found in Book 12 of the *Gems of German Song*, here before us, which contains eight tuneful and expressive songs by Mendelssohn, Kücken (a name new to us), Lauer, Eckert, and Staudigl. This publication is valuable and cheap: we think, however, that the German words might have been judiciously printed as well as the English text.

We can but add a line, to recommend to the violin student Mr. Loder's *Whole Art of Bowing*. As the work of our best violin master and our best leader, it can hardly be other than useful: the exercises seem to us well varied.

MISCELLANEA

Paris Academy of Sciences.—Aug. 30.—The greater part of this sitting was occupied with a report on a communication from M. D'Orbigny, 'On the Geology of South America.' The author has ascertained, that the geology of that part of the globe bears a strong resemblance to that of Europe, and that where a difference exists it is by no means so striking as, from the great distance, might have been imagined.—M. Arago read a letter from the Minister of Public Instruction, requesting him to consult the Academy as to the propriety of publishing, at the expense of the State, the works of the celebrated Lavoisier. M. Arago stated, that he had in his hands several manuscripts which had been confided to him by the widow of Lavoisier, and which he would place at the disposal of the Academy. A commission was charged with the subject referred to in the above letter.—A paper was received from M. Stanislas Julien, containing the description and the seed of a textile plant, received from the Abbé Voisin, one of the Directors of the Foreign Mission in China.

Manchester, 4th of September.

British Association.—You will oblige me by correcting an error which appears in your Report of the conversation which took place in Section C at Cork, on Mr. Murchison's Permian System: I am made to say that I had found fishes of the genera Cœlacanthus, Platysomus, and Palæoniscus in the Bunter-sandstein at Weston, Cheshire, accompanying footmarks of the Labyrinthodon; whereas, what I said (after noticing the occurrence of such impressions) was, that three genera of fish in the coal measures, namely, those above alluded to, occurred also in the marl slate of the new red sandstone formation, without naming any specific locality. Apologizing for occupying your valuable columns,

I am, &c. E. W. Binney.

Gold Dust.—The Russian journals give the following particulars relative to the progress of discovery of gold-dust, &c., in that empire. During the summer of 1842, the arrondissement of the mines of Wiask was explored by five several expeditions commissioned to seek for deposits of gold-bearing sand, and one sent in search of precious stones. The former discovered 22 different beds of sand yielding gold, situate partly in new localities and partly in the neighbourhood of the beds already in course of being worked. The whole of the sites discovered in that year contain a mass of 18,375,269 pds. of sand, yielding 34 pds. 39 lb. $8\frac{46}{96}$ zol. of gold. In the mines of Zlatoust was found a remarkable crystal of colourless topaz, vulgarly called Siberian diamond, weighing $61\frac{1}{2}$ zolotricks; and in the mines of Wiask, a lump of gold of the weight of 25 zol.

Progress of Lotteries.—Upwards of 4000*l.* will be awarded to Subscribers. — Important and attractive Musical, Literary, Fine-Art, and General Distribution. — Subscribers must obtain, on — October next, by their One-guinea Subscription (in fact, by a chance which costs them nothing), the Grand Finger Organ, which cost 550*l.*, and three other Organs; also a new and splendid $6\frac{1}{2}$-octave Cabinet Pianoforte, value 60*l.*, for one guinea, and six other Pianos; capital Billiard Table, cost 80*l.*, for one guinea;—Daniell's Oriental Scenery, published at 200 guineas, for one guinea; and eighty other costly and superb Works, and 389 other Prizes, from 2 to 200 guineas each, consisting of fine Gallery and Cabinet Pictures; numerous articles of elegant and costly Furniture; two Hogsheads and six Quarter-casks of Port and Sherry; six cases of the finest Champagne; 20 dozen of Sherry; 68 dozen of other Wines, &c. &c.; besides 800 intermediate Prizes. The Drawing will be conducted on the plan of drawing for Prize Pictures at the London Art-Union, but the arrangement far more liberal.—*Cambridge Advertiser.*

A Sheet of Paper.—Mr. Limbird, of the Strand, has a sheet of paper four feet seven inches wide, six hundred yards long, and weighs one hundred and thirty-seven pounds. It is of fine texture, and has been made for the purpose of taking impressions of monumental brasses.

Musical Instruments.—A Lyons journal states that M. Marlaveau, a silk-manufacturer of that city, has applied the principles of the Jacquard loom to musical instruments. His first trial has been on the accordion. A card is used to vary the tunes as it is used in the weaving to change the pattern.

Ortolans.—Perhaps the greatest refinement in fattening is exhibited in the manner of feeding ortolans. The ortolan is a small bird esteemed a great delicacy by Italians. It is the fat of this bird which is so delicious; but it has a peculiar habit of feeding, which is opposed to its rapid fattening—this is, that it feeds only at the rising of the sun. Yet this peculiarity has not proved an insurmountable obstacle to the Italian gourmands. The ortolans are placed in a warm chamber, perfectly dark, with only one aperture in the wall. Their food is scattered over the floor of the chamber. At a certain hour in the morning the keeper of the birds places a lantern in the orifice of the wall; the dim light thrown by the lantern on the floor of the apartment induces the ortolans to believe that the sun is about to rise, and they greedily consume the food upon the floor. More food is now scattered over it, and the lantern is withdrawn. The ortolans, rather surprised at the shortness of the day, think it their duty to fall asleep, as night has spread his sable mantle round them. During sleep, little of the food being expended in the production of force, most of it goes to the formation of muscle and fat. After they have been allowed to repose for one or two hours, in order to complete the digestion of the food taken, their keeper again exhibits the lantern through the aperture. The rising sun a second time illuminates the apartment, and the birds, awaking from their slumber, apply themselves voraciously to the food on the floor; after having discussed which, they are again enveloped in darkness. Thus the sun is made to shed its rising rays into the chamber four or five times every day, and as many nights follow its transitory beams. The ortolans thus treated become like little balls of fat in a few days.—*Playfair*, in the *Journ. Agricult. Soc.*

Fall of Frogs.—An extraordinary phenomenon accompanied the heavy fall of rain on the 28th ult., namely, an innumerable quantity of frogs of small size. Thousands of them must have fallen during the evening and early part of Monday night. They were to be seen in immense numbers in the town of Stourbridge and its neighbourhood, far removed from any place in which they could have been bred. On the same evening a man and a boy were passing in the storm from Brettel-lane to Stourbridge, when the latter called the attention of the former to the fact of one falling on his shoulders, which caused them to be more observant; and they afterwards noticed several which fell upon them. Similar phenomena have been observed before in different places. The circumstance may be accounted for on the supposition that a pool or other water containing the diminutive frogs has been within the influence of the storm, when the water and its contents have been carried up, in a similar manner to that in which we sometimes see dust or hay carried up in a spiral form by what is termed a whirlwind.—*Worcestershire Chronicle.*

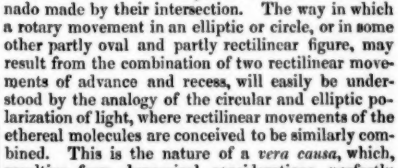
THIRTEENTH MEETING OF THE BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

[*From our own Correspondents.*]

MONDAY, AUGUST 21.

SECTION A.—MATHEMATICAL AND PHYSICAL SCIENCE.

Col. SABINE read Sir J. F. W. Herschel's 'Report of the Committee appointed for the Reduction of Meteorological Observations.'—The Report stated that the Committee had made great exertions to complete the series of equinoxial and solstitial observations during the years 1835, 1836, 1837, and 1838, and had succeeded in obtaining 334 sets of observations made at 69 distinct stations, a synoptic statement of which, with the geographical elements of the stations, was annexed to the Report. These observations, however, by no means formed a connected whole, and promised no distinct or definite results, except as regarded barometric fluctuations, or the propagation of atmospheric waves, which by this method of inquiry alone can be traced over an extensive region. When the trifling depth of the ponderable atmosphere enveloping our globe is taken into consideration, with the number and magnitude of local circumstances which influence its movements, it will be manifest that we may disregard altogether the figure of our planet, and assume, for the purposes of our inquiry, that the atmosphere extends indefinitely in a plain, in portions of which the phenomena vary with local causes. The stations of observation have been divided into groups, grounded on this view of the subject; and two objects have been chiefly kept in view:—1st, The tracing, where it can be accomplished, the curves of one particular wave over the whole area embraced within one of our districts; and 2ndly, Where this cannot be done, the observation of connexions between particular localities, with a view to the subdivision of the total area into barometric districts, in which the atmospheric fluctuations shall be, generally speaking, similar in their phases. In discussing the observations in the European group, the following have been the principal results:—1st. Distinct barometric waves, of many hundreds of miles in breadth, have been traced over the whole extent of Europe,—that is to say, at least over an area having Markree, in Ireland, Cadiz, in Spain, Parma, in Italy, and Kremsmünster, in Hungary, for its angular points, not only the breadth but the direction of the front, and the velocity of progress of such waves, have been clearly made out. 2nd. Besides these distinctly terminated waves, we have been able, if not to trace the rate and line of progress, at least to render very evident the existence of undulatory movements of much greater amplitude; so great, indeed, as far to exceed in dimension the area in question, and to require much more time than the duration of the term series (thirty-six hours) for their passage over a given locality. 3rd. In Europe, Brussels is clearly entitled to be regarded as a point of comparatively gentle barometrical disturbance. Very deep waves, it is true, and very extensive ones, ride over it; but with regard to smaller ones, it may be regarded as in a certain sense a nodal point, where inequalities are smoothed down, and oscillatory movement in general is more or less checked; and such movements increase in amount as we recede from Brussels and Cadiz, especially towards the north-west, as far as Markree. 4th. The diurnal oscillations are very conspicuous in a single day's observations, hourly continued; this being rather the general rule than the exception. In particular, the afternoon minimum (4 P.M.) stands forth as a prominent feature in almost all cases where there is not some violent barometric disturbance. 5th. Hanover offers barometric anomalies, separating it from the Belgian type (to which latter the south of England as well as Geneva belongs). Possibly it is connected with a Scandinavian or Polish system. Edinburgh is as remarkable for inequalities and abrupt fluctuations in its barometric changes as Brussels is for the reverse. Turin seems to be much affected by its proximity to the Alps, which gives its barometric curves frequently a very disjointed character. Between the Italian stations (Turin and Parma) and the Spanish (Cadiz, Gibraltar, Tangier,) no community of character and no mutual dependence prevails. Cadiz, Gibraltar, and Tangier are subject to an anomalous rise and fall of the mercury between midnight and sunrise, which interferes with and often counteracts and overcomes the regular tendency to depression in that interval, a peculiarity which is probably owing to the proximity of the great surface of the African deserts. At Tangier the barometric fluctuations seem to be remarkably small. Markree is remarkable for the boldness and freedom of contour in its barometric curves, and the great range of their fluctuations, compared with stations to the south-east of it. The barometric curves derived from the Indian stations are remarkable for their general smoothness. In those from Mauritius the diurnal oscillations are conspicuously developed. In South Africa, the observations made at two stations exhibit much local disturbance; those made at Bathurst showing frequently an opposite tendency to those made at Cape Town. The American observations are as yet too incomplete to allow their apparent irregularities to be traced to laws. The Report then proceeds to consider the utility of prosecuting these observations, and advises that the field of inquiry be somewhat narrowed by limiting it to some distinct point of meteorology, such as the tracing of atmospheric waves, and the determination of the co-efficients of the diurnal periods. To the latter point the hourly system of observation alone is applicable; and monthly series (on the 21st of each month) of such observations from a vast number of stations, in which absolutely nothing else were set down than the hourly march of the barometer for twenty-five consecutive hours, so as to begin and conclude the twenty-four hours with an observation, would, in itself, if continued for a few years, leave nothing to be desired on this important head. All observations should be at once reduced, and there should be no omissions, as observations, defective in any way, cease to be comparable, and lose much of their value. The fluctuations already traced, by projecting the term observations, are those only whose total duration of rise and fall is comprised within, or does not much exceed the twenty-four or thirty-six hours over which the term extends; but these are by no means those which, either theoretically, or, indeed, practically speaking, are to be regarded as most important. Mr. Burt laid down, from his own observation, barometric projections, in which the interval between two successive maxima of pressure occupied in the one case seventeen days without any intervening maximum, in another a similar period, with two subordinate maxima interposed, and another where a beautifully symmetrical wave of an extremely remarkable character occupied thirteen days for its complete rise and fall. When dealing with undulations of such extent, it is by no means a visionary speculation to consider the possibility of tracing them over the whole of our globe—nay, perhaps of obtaining evidence of their performing, tide-like, two or more revolutions round its surface; and in this most interesting inquiry Mr. Burt has stated his readiness to engage, should it be the pleasure of the British Association to intrust the subject to his inquiries by appointing him a Committee for that purpose. The Report then passed to the consideration of the winds, which it divided into two classes,—winds of translation, and winds of oscillation, nearly in the way in which the movements of the ocean may be divided into oceanic currents and tide streams, and these again (regarded as the results of oscillatory movements) may be referred to the general laws which regulate the molecular movements of water in contact with the bottom of the sea, when under the influence of the undulatory agitation. The trade winds and greater aerial currents of a similar character, to which the name of monsoons is given, are winds of translation. They have a distinct barometrical origin in the diminution of pressure in approaching the equator, caused by the expansion of the equatorial atmosphere, and the overflowing of the upper strata outwards towards the poles. But this cause is not oscillatory, but permanent. Monsoons also arise in the same way, from local heating and cooling,—periodically renewed, it is true, but in long periods of six months in duration, so as to give rise to steady currents; with such winds the present research has little connexion, except in so far as their powerful influence mixes with and masks the effect of the other class of winds—those which arise from barometric oscillation, and which are connected with such oscillation in a more direct and intimate manner. The oscillations themselves, perhaps, take their rise in local and temporary causes, prevailing over great areas simultaneously,—the principle, no doubt, depending on the prevalence of cloud or clear sky, rain, or dryness, over great tracts for several days or weeks in succession. But once produced, and an extensive atmospheric undulation once propagated, a wind or system of winds dependent on such undulation necessarily arises also. Every wavelike movement in a fluid consists of two distinct things, an advancing form and a molecular movement. Now the advancing form is indicated to us by the barometer—the molecular movement by the wind, and between these two phenomena there subsists of necessity a close and purely dynamical connexion: and it would be no small meteorological discovery, if, by the study of the characters and progress of barometrical fluctuations, we could either make out any law of the greater ones which would enable us even roughly to predict them, or any peculiarity in their physiognomy, by which we could recognize them in their earlier stages, as by this we might possibly be led to the prediction of great storms. It is a fact which has of late been a good deal insisted upon, viz. that at certain stations the winds revolve in one uniform direction: the vane, for example, at Greenwich, (as is stated by the Astronomer Royal,) makes five revolutions per annum in one uniform direction—may not this phenomenon be, in effect, an indication of some atmospheric node, where a line perpendicular to the strata of the atmosphere may be regarded as describing a conical surface round the true vertical. If it be true (as the discussion of the Term Observation may lead us to suspect,) that Brussels is in effect such a nodal point, the examination in this view of its "Wind-Rose" would be interesting. On the subject of revolving storms, Sir J. Herschel states that he is not fully prepared to speak; but he adds, that there is certainly one point of view in which some of the principal of their phenomena would seem capable of explanation in this way of conceiving winds of oscillation, and in which they would become traced up, not into funnel-shaped revolving depressions, in the nature of water-spouts, but simply to the crossing of two large long waves, running in different directions, thus:



Where A A′ A″ represent the progress of one wave, B B′ B″ that of the other, and *t t′ t″* that of the tornado made by their intersection. The way in which a rotary movement in an elliptic or circle, or in some other partly oval and partly rectilinear figure, may result from the combination of two rectilinear movements of advance and recess, will easily be understood by the analogy of the circular and elliptic polarization of light, where rectilinear movements of the ethereal molecules are conceived to be similarly combined. This is the nature of a *vera causa*, which, resulting from dynamical considerations, perfectly general and indefeasible, cannot be without some influence, the only question being that of amount.

The DEAN OF ELY and Dr. ROBINSON testified the great importance of the reductions already effected by Sir J. Herschel, and offered several suggestions as to the best mode of complying with the wishes of Sir John Herschel for continuing the reductions, and having the grant renewed.

Col. SABINE's 'Report of the Committee for the Translation and Publication of Foreign Scientific Memoirs,' merely enumerated four treatises by Gauss and Lamont, which have been translated and published since the last meeting.

Prof. MACCULLAGH, the President (the Dean of Ely, Vice-President, in the meantime taking the chair,) read a communication 'On the Theory and Laws of Total Reflexion.'—The phenomena of total reflexion had for centuries excited the attention of mathematicians, who had endeavoured in vain to explain it; and it had been regarded by Newton as an insuperable objection to the Undulatory Theory of Light; for, according to him, the vibrations of the

ether could not be suddenly stopped at the separating surface of the denser and rarer media; as an elastic fluid communicates motion on all sides, the vibrations on arriving at the surface of the rarer medium, should necessarily pass into it, and thus there would always be some refracted light; and total reflexion, on the hypothesis of undulations, would be impossible. It is curious, therefore, to observe that the phenomenon is now explained, and that for the first time, on this very hypothesis, and all its laws deduced with geometrical accuracy. The principles, however, on which the explanation is founded, are altogether new, though in strict accordance with the theory of waves, and the general laws of dynamics. Before the condition of the totally reflected light can be determined, the motion which takes place in the rarer medium—a motion not observable by the senses—must be ascertained; Poisson had caught a glimpse of the way in which the solution was likely to be effected. In some investigations respecting the transmission of motion from one elastic medium into another, across their separating surface, he had found that in certain cases the disturbance in the second medium would be proportional to a negative exponential, which would diminish very rapidly as the distance from the separating surface increased, so that at a very small distance from the surface, the disturbance would be quite insensible. This result enabled him, in a general way, to remove the objection which Newton had urged against the undulatory theory, because it furnished an instance in which the vibration did not sensibly spread beyond a certain surface; but, except so far as this, it did not give the lenst assistance in the solution of the question of total reflexion. The problem of determining the motion in the rarer medium—the insensible refracted motion—occupied also the attention of Fresnel; and, as he tells us himself, he meditated upon it for six years, without success. But he succeeded completely in discovering the motions of the *reflected* light, by a most ingenious interpretation of the formulæ which he had found for the usual case of partial reflexion, and which give imaginary results when the reflexion is total. Perhaps the rare sagacity of Fresnel was never more conspicuous than in this remarkable instance, in which he applied his formulæ to a case which they did not originally include, and thus succeeded in divining, as it were, the laws that he was in search of. But these laws rested on no physical foundation; nor could they be made to do so without previously determining the laws of the insensible refraction with which they are necessarily connected. To find the laws of insensible refraction, it was necessary to know the general differential equations for the propagation of light in a transparent medium; and to deduce from these laws the laws of total reflexion, it was necessary to know the general equations which subsist at the confines of two transparent media. Both these sets of equations were given, for the first time, by Prof. MacCullagh; the former having been originally published in the *Philosophical Magazine* for February 1836, the latter in the Proceedings of the Royal Irish Academy for December 1839. The equations had been first applied to the solution of the problem of reflexion and refraction, when the reflexion is partial and the refraction sensible, giving rise to one or two visible refracted rays; which is the simpler case, and was therefore the first solved, the solution having been given in the proceedings of the Royal Irish Academy at the latter date. But it was some months later before Mr. MacCullagh perceived that these same differential equations included also the laws of total reflection, and of the accompanying insensible refraction, the only difference between this and the former case being the assumption of more general expressions for the integral of the equations of propagation. The expression for the displacement parallel to each axis of co-ordinates now contains a negative exponential of which the exponent is a linear function of the co-ordinates, this exponential being multiplied by a quantity which contains, in general, both the sine and cosine of the phase. By reason of this exponential, the vibrations in the rarer medium rapidly decrease in magnitude as the distance from the surface of separation increases, becoming insensible at a very small distance from that surface; and when the aforesaid expressions for the displacements are substituted in the equations of propagation, we get certain relations among the constants, which relations are in fact the laws of the insensible refraction. The laws of the totally reflected light are then easily deduced, by means of the equations which subsist at the separating surface. It is to be observed that the reflection is not *assumed* to be total, but is *proved* to be so, from the equations last mentioned; and the laws of this reflexion come out the very same (for ordinary media) as those discovered by Fresnel in the singular way before alluded to. On account of the novel character of the laws of insensible refraction, Mr. MacCullagh entered into some details respecting them. The vibrations are in this case *elliptical*, every particle of the rarer medium describing an ellipse, which has the directions and the *proportion* of its axes every where the same; but the *magnitudes* of its axes rapidly diminish as the distance of the particle from the common surface of the media increases. It would, however, take up too much space to go into these laws, which will be published in the Transactions of the Royal Irish Academy. The problem of total reflexion was considered by Fresnel only with reference to two ordinary media. The preceding method, however, is general, and solves the problem in its widest extent. The most complicated case is that in which the rarer medium is supposed to be a doubly refracting crystal, the crystal being covered with a fluid of greater refractive power than itself, so that total reflexion may take place at the common surface. We then have insensible refraction within the crystal, and it is found that this refraction is *double*, giving rise to two insensible waves, in each of which the vibrations are elliptical. The laws of this *insensible double refraction* are very general, and include, as a particular case, the laws of double refraction discovered by Fresnel.

The SECRETARY then read Sir J. W. F. Herschel's 'Report on the Nomenclature of the Stars.'—The Committee reported that certain celestial charts of great merit have recently appeared in Germany, and that others are in progress of publication, which, if answerable to the expectations they have been led to form of them, may influence their decision both as to the names and boundaries of the constellations; they consider it desirable, therefore, to defer their decision till they shall have been enabled to consult these works.

Prof. LLOYD read a paper 'On the Regular Variations of the Direction and Intensity of the Earth's Magnetic Force.'—In this communication the author has given the principal results of the series of observations which have been made at the Dublin Magnetical Observatory, as far as they have been yet reduced. These observations were commenced in the beginning of the year 1839, and have been continued, almost without interruption, to the present time. Since the beginning of the year 1840, they were taken every two hours, day and night, in accordance with the general plan of observation laid down by the Royal Society. The elements directly observed are the *declination* and the *two components* (horizontal and vertical) *of the intensity*, and from the variations of the latter, those of the *total intensity* and *inclination* are readily deduced. The means of observing the vertical component of the intensity having proved not altogether satisfactory, another instrument has since been contrived by the author, by which the changes of the inclination are given directly. Prof. Lloyd would not occupy the time of the meeting with any account of the instruments or methods of observation, which are now sufficiently known by all interested in the subject of terrestrial magnetism, but would proceed at once to the results obtained, so far as they related to the regular changes of the magnetic elements, commencing with the *diurnal changes*. These variations were projected in curves, which represented the course of the mean daily changes for the entire year, for the summer and winter half years, and for each month separately.

Declination.—The mean daily curve of the changes of declination for the entire year exhibits a small easterly movement of the north end of the magnet during the morning hours, which reaches its maximum about 7 A.M. After that hour, the north end moves rapidly westward, and reaches its extreme westerly position at $1^h\ 10^m$ P.M. It then returns to the eastward, but less rapidly, the easterly deviation becoming a maximum about 10 P.M. The mean daily range = 9.3 minutes. During the summer months the morning maximum at 7 A.M. is more marked; the evening maximum, on the contrary, disappears, there being a slow and regular movement of the north end to the eastward from 7 P.M. until 7 A.M. In winter, on the other hand, the evening maximum is well defined, and the morning maximum disappears, there being a slow and regular westerly movement until 9 A.M., after which the movement becomes more rapid in the same direction. The epoch of the extreme westerly position of the magnet is nearly the same throughout the year. The greatest daily range, in summer, is about 13.7 minutes; the least range, in winter, about 7.2 minutes.

Horizontal Intensity.—The mean daily course of the horizontal force, for the entire year, has two maxima and two minima. The first minimum occurs between 1 A.M. and 3 A.M., which is followed by a maximum about 5 A.M., or a little after. These fluctuations are small. A second and principal minimum takes place at 10 h. 10 m. A.M.; and a second, or principal maximum, about 6 P.M. The mean daily range =.0024 of the whole intensity. In the summer months the smaller maximum and minimum disappear, the intensity decreasing continually throughout the night, but slowly, until 5 or 6 A.M., after which the decrease becomes rapid. There are, consequently, but one maximum and one minimum in the mean daily curve, which correspond nearly in epoch with the principal maximum and minimum of the curve for the entire year. In the winter months, on the other hand, there are three maxima and three minima, the evening maximum appearing to break into two. The epoch of the morning maximum moves forward as the time approaches the winter solstice, appearing to depend upon the hour of sunrise, which it precedes by a short interval. The epoch of the principal minimum is nearly constant throughout the year. The daily range is greatest in the month of July, when it is about .0045 of the whole intensity; it is least in the month of January, being then about .0008 of the whole.

Total Intensity and Inclination.—The total intensity appears to vary very little throughout the day. It seems to be least about 9 A.M., and then to increase, attaining a double maximum in the afternoon. The total range, however, being very small, the variations of the two components of the intensity are dependent chiefly upon the changes of the inclination. The inclination is greatest between 10 h. and 10 h. 30 m. A.M., and least about 6 P.M., the epochs corresponding with those of the least and greatest values of the horizontal intensity. The daily range is about two minutes in the early part of the year, and increases to more than double of that amount in summer. If we combine the changes of declination and inclination, the former being multiplied by the cosine of the absolute inclination, we obtain the whole movement of the north end of the magnet in free space, or the curve formed by the intersection of the magnetic axis with the sphere whose radius = unity. The whole movement during the first six hours of the day is inconsiderable. It appears, on a review of these facts, that the diurnal changes in the direction of the magnetic force are (as might be expected) connected with the diurnal movement of the sun, and its times of rising and setting. The changes of the intensity appear to be influenced in addition by some other cause, or by the same cause operating less directly. Prof. Lloyd concluded his paper by an account of the annual changes in the magnetic force at Dublin, as far as they have been hitherto determined.

Col. SABINE said, that the labours of Prof. Lloyd in this department of physical research were most important and extensive; yet he was happy to inform the Section that there was now in the room a foreign scientific gentleman, Dr. Langberg, of Norway, the minuteness of whose researches even exceeded Prof. Lloyd's; for whereas these observations were made every two hours during day and night, the observations of Dr. Langberg were made at intervals of only ten minutes day and night.—The DEAN OF ELY inquired whether the results of those most laborious observations had yet been published.—Dr. LANGBERG replied that a portion of them had been published in Gauss and Weber's Resultate.

'On the Circumstances which affect the Energy of Artificial Magnets,' by the Rev. W. Scoresby, D.D.—The object of this communication, Dr. Scoresby

stated, was not to enter into the extensive bearings of the subject announced, which the time of the Section would not allow; but he might just state, in general terms, that the energy of permanent artificial magnets, of which alone he designed to speak, was affected by a considerable variety of circumstances, all acting by laws peculiar to themselves, and thus occasioning differences in the resultant energy whenever any of the circumstances might be changed. These circumstances comprised quality of steel, denomination (such as cast steel, shear steel, blister steel, &c.), temper or hardness, mass, and form. Hence, from the varying influence of these several circumstances, it was impossible to give a general answer to the inquiry, as to the best kind and temper of steel for permanent magnets. In large magnets, indeed, consisting of considerable combinations of bars or heavy masses, he, Dr. Scoresby, had sufficiently determined the fact, that best cast steel, made as hard as possible, was the most effective; but for small magnets or thin compass needles, other steel, or cast steel tempered, became most effective. In a six-inch bar which he exhibited, of 600 to 700 grains' weight, hard cast steel was advantageously employed; but in thin plates, used singly or in pairs, such hardness required to be reduced. But by extensive investigation of the effects of these several conditions, if any particular case were stated, he could easily determine the requisite qualities. That the power of a magnet was essentially dependent on both *quality* and *hardness*, he, Dr. Scoresby, proceeded to show by experiment with four small bars of similar size, but different qualities or tempers. One lifted only 600 grains, another about 1,000, another the same, another 3,200 grains. Tried by Dr. Scoresby's mode of testing, described last year, he found the first to be bad in quality; the second inferior, and too soft; the third good in quality, but not hard enough; the last excellent in quality and hardness. On being laid in succession upon the test bar, the first three lost all their power, whilst the last retained still the power of lifting a key of 3,200 grains' weight. Two anomalies in practical magnetism were then described. First, the experimentally determined fact, that proportional magnets of similar steel and temper were not energetic proportionally with their masses; in other words, that two magnets, one, for instance, being double in all its dimensions of the other, would not exhibit powers corresponding with their masses, or in proportion to the cubes of their lengths,—the proportions instead of being as $1^3 : 2^3 = 8$, would perhaps be found to be as 1 to 5 or 6 only. Hence it would be inferred that magnets could not be advantageously enlarged to an indefinite extent; at the same time, from the experiments already made, he, Dr. Scoresby, would have no difficulty in constructing a magnet of a ton weight, and, by means of his peculiar test (which he exhibited to the Section), of rendering every bar effective. The other anomaly to which he referred, was that arising out of difference of form. In all his experiments, on more than 1,000 bars or plates, he had always found that extreme hardness was the most effective in large or considerable combinations of straight bar magnets. His surprise was therefore great, on trying the same principle on two horse-shoe magnets of five and fifteen bars, to find that the same law did not prevail. The magnets, until reduced in temper, were of low power. To reduce them by a fixed and determinate rule, he, Dr. Scoresby, adopted a bath of oil, boiling at about 600°. He tried the effect of various temperatures, from 300° to the boiling, and thence determined the ratio of improvement until he obtained the best. The magnets, annealed ultimately at a uniform temperature of 505°, now exhibited very superior powers, lifting from seven to nine times their own weight.

The Dean of Ely pointed out the great practical value of these researches, as bearing directly upon the proper construction of ships' compasses. He suggested, that unless Dr. Scoresby took the trouble of reducing these valuable observations to some more permanent form, and publishing them, they would be lost.—Dr. Scoresby replied that he had tabulated the results, and laid before the Physical Section at Manchester diagrams which placed before the eye at a glance the most important of these results, and that he was making preparations to publish them in a separate form. Another object which he contemplated, was the connexion of the best form of magnet with the economical production of power; and he had little doubt that the magnet would yet be used for the production of motive force. Whenever that was the case, he felt assured the permanent magnet would be found more economical than the galvanic battery. As matters stood, even now he could engage to produce, if requisite, a magnet of over a ton in weight.

'Description of a Galvanometer,' by Mr. J. P. Joule.—It is a well-established principle in electrodynamics, that if a small magnetic needle be suspended in the centre of a coil or helix, and in the plane of its axis, the tangents of its deflections will be nearly, but not exactly, proportional to the quantity of current passing through the coil. It has, therefore, been found necessary to construct tables for turning the deflections of the needle into quantities of current. The necessity of forming these tables was first insisted upon by M. Becquerel; and in his Treatise on Electricity he has pointed out the laborious experimental processes employed by himself and others in their construction. It is obvious that one table would suit all instruments possessing the same relative proportions. And the instrument which Mr. Joule presented to the notice of the Association, was designed as a *type* for the construction of galvanometers. It consisted of a needle, three inches long, suspended in the centre of a coil of six inches diameter. By a simple mechanical contrivance the coil could be removed from the instrument, and replaced by others adapted for the measurement of currents of different quantities and intensities; but in all cases their dimensions were to be exactly similar, and their diameter exactly twice the length of the needle. A most important part of the instrument was the needle, which was constructed on Dr. Scoresby's principle, and consisted of two straight and perfectly hard pieces of watch spring, placed at a distance from each other of about $\frac{1}{3}$ of an inch, the agate cap being fixed between them. The importance of this form of needle consisted in the facility it presented of constructing different needles perfectly similar to one another with regard to the distribution of magnetism in them, which is essential to the accuracy of the same table applied to different instruments.

Sir W. R. Hamilton presented the result of some investigations connected with the Calculus of Probabilities. The advantage of the method therein proposed is, that the auxiliary variable (which he calls the "argument of probability," and suitably determines,) depends, in general, more simply than the probability itself, on the conditions of a question; while the introduction of this new conception and nomenclature allows some of the most important known results respecting the mean results of many observations to be enunciated in a simple and elegant manner.

The Dean of Ely observed, that the value of the communication just laid before the Section by Sir W. Hamilton could scarcely be appreciated by those not acquainted with the fact, that it is by the aid of formulæ furnished by this calculus that observers were now universally in the habit of estimating the degree of dependence to be placed on all astronomical observations, and on the experiments which were the foundation of every branch of physical inquiry.

'On the Changes which Bodies undergo in the Dark,' by Mr. R. Hunt.—At the last meeting of the British Association great interest was excited by the announcement of a discovery by Möser, of Königsberg. This discovery was, that all bodies were capable in the dark of impressing their forms upon other bodies brought near them. Since that period three papers have been published in the Scientific Memoirs, which fully set forth the views entertained by Möser; and the subject has occupied the attention of Prof. Draper, of New York, of Mr. Prater and others in England, and also of Fizeau in France. Both Professors Möser and Draper attribute the phenomena to the radiation in darkness of light which has been absorbed, and which remains latent in all bodies; while Fizeau seeks to explain them by the existence of films of organic matter, which are easily disturbed, and in this view he is followed by Sir David Brewster, by Prof. Grove, and to a considerable extent by Mr. Prater. For the purpose of testing these hypotheses, Mr. Hunt made the following experiment. Three flat bottles, manufactured for Mr. Hunt's experiments on the influence of light on plants, were carefully prepared with three differently coloured fluids. An intense solution of carmine in ammonia, which admitted the permeation of the red rays only; a strong solution of the sulphate of chromium, through which but a portion of the most refrangible red and the orange and yellow rays only passed; and the ammonia sulphate of copper, which absorbed all but the most refrangible portion of the spectrum. Thus were obtained the means of isolating, with a tolerable degree of purity, the calorific, the luminous, and the chemical spectra. Having several designs cut out of white paper, these were placed on copper plates, and being covered with the above bottles of fluids, placed in the sunshine. After remaining exposed for different periods at different times, from half an hour to three hours, they were brought from the light, and the plates placed in the mercurial vapour box, and subjected to its influence. In no instance did any impression appear on the plates which were placed under the blue or yellow fluids, but in every case most decided impressions on those plates which were subjected to the influence of the red rays. Indeed, in some cases the impressions were beautifully visible without the use of mercurial vapour. It does, therefore, appear, when we take into consideration besides the above facts, also the fact which has been admitted, that artificial heat, at least, accelerates this molecular change, that an amount of evidence has been obtained in favour of the hypothesis of calorific disturbance, superior to the supposed evidences in favour of the absorption and radiation of any other solar emanation. From another series of experiments made with washed and unwashed plates, Mr. Hunt concluded that organic matter is not the cause of these images; but that the effect is due either to some disturbance of the latent caloric, which produces a molecular change, or to a thermo-electrical action, which it is difficult to understand. Had the effect been due, as M. Fizeau has stated, to slight layers of organic matter of a volatile nature, it appears natural to suppose that these mysterious images would have been found only on the very surfaces of the plates. Now this is far from being the case. These images are often found to be impressed to a great depth into the metal. Mr. Hunt in many cases removed several surfaces of copper, and yet had been able to revive the images. He possessed copper plates rendered useless by the impressions, which he has in vain endeavoured to remove.

Mr. Norr thought it idle call in the aid of Mr. Draper's Tithonic rays to perform an office for which the well known and understood principles of electricity would, as he conceived, be amply sufficient to account, as there was always electricity developed upon the contact of two dissimilar bodies.—Mr. Hunt leaned to the opinion, that those who maintained that electricity was never developed by simple contact, come nearer to a correct interpretation of all the known facts.

Section B.—CHEMISTRY AND MINERALOGY.

'Chemical Suggestions on the Agriculture of Cork,' by Thomas Jennings, Esq.—The author drew attention to the present state of Agriculture in the south of Ireland, and to the immense importance of some system by which the value of the limestones and sands of the district might be carefully ascertained by good chemical analysis. Two kinds of limestone were found in the neighbourhood of Cork, the variety which yielded the best lime for building was found to be very inferior to the other as a manure. The sands from the bed of the river Lee, and many of the sea sands were used as manure with very uncertain results. The author suggested the propriety of having correct analyses made, and large masses of the rock, or of the sand, placed in some museum, where the results of careful analysis should be registered.—Dr. Kane thought that the impulse given by the celebrated work of Liebig was rather likely to tend to injury than otherwise. Agriculturists were led to expect great results from the application of chemistry to agriculture, and imagined that they might have all the advantages of the science without incurring any expense.—Dr. Apjohn concurred in the justice of Dr. Kane's remarks.

'Some Remarks on the Chemistry of the Arsenites,' by J. Apjohn, M.D.—This paper contained an account of some desultory experiments, made with

the view of obtaining a more exact knowledge of the Arsenites than can be acquired from books. Although a valuable addition to toxicological chemistry, it was wholly of a technical character, and offered no general truths or discoveries which could render it interesting beyond the laboratory.

'On the Calorific Effects of Magneto-Electricity, and the Mechanical Value of Heat,' by Mr. J. P. Joule.—Although it has been long known that fine platinum wire could be ignited by magneto-electricity, it still remained a matter of doubt whether heat was evolved by the *coils* in which the magneto-electricity was generated: and it seemed indeed not unreasonable to suppose that *cold* was produced there, in order to make up for the heat evolved by the other parts of the circuit. The author had endeavoured therefore to clear up this uncertainty by experiment. His apparatus consisted of a small compound electro-magnet, immersed in water, revolving between the poles of a powerful stationary magnet. The magneto-electricity developed in the coils of the revolving electro-magnet, was measured by an accurate galvanometer; and the temperature of the water was taken before and after each experiment by a very delicate thermometer. The influence of the temperature of the surrounding atmospheric air, was guarded against by covering the revolving tube with tinfoil, &c., and by the adoption of a system of interpolation. By an extensive series of experiments with the above apparatus the author succeeded in proving that heat *is* evolved by the coils of the magneto-electrical machine, as well as by any other part of the circuit, in proportion to the resistance to conduction of the wire and the square of the current; the magnets, having, under comparable circumstances, the same calorific power as the voltaic electricity. Prof. Jacobi, of St. Petersburgh, had shown that the motion of an electro-magnetic engine generates magneto-electricity in opposition to the voltaic current of the battery. The author had observed the same phenomenon on arranging his apparatus as an electro-magnetic engine; but had found that no additional heat was evolved on account of the conflict of forces in the coil of the revolving electro-magnet, and that the heat evolved by the coil remained, as before, proportional to the square of the current. Again, by turning the machine contrary to the direction of the attractive forces, so as to *increase* the intensity of the voltaic current by the assistance of the magneto-electricity, he found that the evolution of heat was still proportional to the square of the current. The author discovered therefore, that the heat evolved by the voltaic current is invariably proportional to the square of the current, however the intensity of the current may be varied by magnetic induction. But Dr. Faraday had shown that the chemical effects of the current are simply as its quantity. Therefore he concluded that in the electro-magnetic engine, a part of the heat due to the chemical actions of the battery is lost by the circuit, and converted into mechanical power; and that when the electro-magnetic engine is turned *contrary* to the direction of the attractive forces, a *greater* quantity of heat is evolved by the circuit than is due to the chemical reactions of the battery, the overplus quantity being produced by the conversion of the mechanical force exerted in turning the machine. By a dynamometrical apparatus attached to his machine, the author ascertained that, in all the above cases, a quantity of heat, capable of increasing the temperature of a pound of water by one degree of Fahrenheit's scale is evolved with the magnetism which possesses a force sufficient to raise a weight of about 874 pounds to the height of one foot.

'On a new method of testing the Hygrometric Formula usually applied to observations made with a wet and dry Thermometer,' by J. Apjohn, M.D.—Some years ago Prof. Apjohn communicated to the Irish Academy a formula for inferring what is called the dew-point, from observations of the wet and dry thermometers alone, and he considered the accuracy of his formula as fully established by three experimental tests, which he explained in a memoir read to the same learned body. "But finding," he says, "that some still doubted, I thought it might be as well to give publicity to a fourth method of verification which I have lately employed, and which has in the fullest manner sustained the general conclusion to which the previous test experiments had conducted. It is well known that if unity represents the specific gravity of dry atmospherical air at the temperature of 60°, and under a pressure of 30, that its specific gravity at the temperature t', and under the pressure f'' will be represented by the expression

$$\frac{521}{461+t'}\times\frac{f''}{30}$$

Now if we suppose the air at t' to be saturated with moisture whose elastic force is f', the specific gravity of the aqueous vapour will be $\frac{521}{461+t'}\times\frac{f'}{30}\times.625$, the latter factor being the density of vapour in relation to air having the same temperature with it, and existing under the same pressure. The air, however, being not at its dew-point, but at some higher temperature t, in order to obtain the specific gravity of the vapour at this latter temperature, the expression already got must be multiplied by $\frac{461+t''}{461+t}$, by which it will become

$$\frac{521}{461+t}\times\frac{f'}{30}\times.625.$$

This, then, is the exact specific gravity of aqueous vapour in air, whose temperature is t, and whose dew-point is t'. And multiplying this by .31 v, .31 being the weight of one cubic inch of atmospheric air, and v the volume, or number of cubic inches of air,

$$\frac{521}{461+t}\times\frac{f'}{30}\times.625\times.31\,v=\frac{3.3647\,f'}{461+t}\times v$$

is the weight of v cubic inches of aqueous vapour whose maximum tension is f', and existing in v cubic inches of air whose temperature is t. Let us suppose this quantity to be determined by experiment, and to be represented by w. Then,

$$\frac{3.3647\,f'}{461+t}\times v=w, \text{ and}$$

$$f'=\frac{w}{v}\times\frac{461+t}{3.3647}.$$

Knowing therefore w, which may be got very accurately by experiment, we can calculate f'. But, by the hygrometric formula,

$$f'=f'-\frac{t-t'}{87}\times\frac{p-f'}{30}$$

this latter value should, of course, be equal to the former; and without detaining the Section with the actual numbers which I have obtained, I may state that the method just explained has completely established the accuracy of the expression which gives the force of vapour at the dew-point in terms of the difference of temperatures of the wet and dry thermometer, of the pressure of the air, and of the tension of vapour at the temperature indicated by the instrument, whose bulb is kept moist.

I have only in conclusion to state that the quantity w is got by slowly passing, by means of an aspirator, a known volume of atmospheric air through a system of two tubes, one of which is packed with small fragments of chloride of calcium, and the other with asbestos moistened by oil of vitriol.

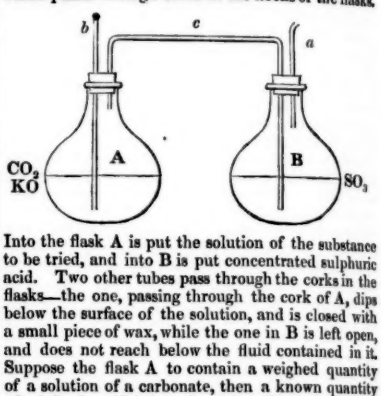
TUESDAY.

'On the Minerals of Cork,' Mr. R. W. Townsend.—A series of minerals, all of them collected by Mr. Townsend, was exhibited. This collection included some beautiful specimens of copper pyrites, grey copper, and malachite, manganese ores of a fine character, and some rare iron ores, and may be regarded as giving a fair view of the mineralogical condition of the county.

Mr. Townsend also exhibited a specimen of manganese taken from the deposit formed by a thermal spring near the Cape of Good Hope. The water issued at a temperature of 110°, and so large was the quantity of manganese, which, in some form, it held in solution, that a very thick incrustation lined the stream within a short distance of the spring.

Report of the Progress made in the Inquiry into the State of the Iron in the Axles of Locomotive Engines, by W. Lucas, Esq.—Little or no progress has yet been made in this inquiry, the Report on which is, therefore, deferred till the next meeting of the Association. Iron of the first quality, and which breaks with a fine fibrous texture, becomes, by cold swaging, changed into a crystalline texture, and consequently brittle. It is again restored by annealing to its first fibrous state. It has been found by experiments that mere concussion, without any hammering, suffices to produce the same crystalline structure.

Abstract of a letter from Dr. Will, of Giessen, 'On an improved method of ascertaining the commercial value of alkalies or carbonated alkalies, acids, and oxides of manganese.'—The apparatus by which this determination is effected consists of two small glass flasks, A and B, connected by the bent tube c, which passes through corks in the necks of the flasks.



Into the flask A is put the solution of the substance to be tried, and into B is put concentrated sulphuric acid. Two other tubes pass through the corks in the flasks—the one, passing through the cork of A, dips below the surface of the solution, and is closed with a small piece of wax, while the one in B is left open, and does not reach below the fluid contained in it. Suppose the flask A to contain a weighed quantity of a solution of a carbonate, then a known quantity of sulphuric acid is introduced into B, and the whole apparatus weighed: the tube b being then closed with wax, if air be blown into a, a portion of the sulphuric acid passes over through the tube c into the flask A, and comes in contact with the carbonate. The consequence is an evolution of carbonic acid, which must go through the concentrated sulphuric acid, and is thus made perfectly dry. When all the carbonate is decomposed, the piece of wax on the tube b is removed, and air sucked through the tube a, in order to remove all the carbonic acid. The apparatus is then to be weighed, and, from these data, the quantity of alkali combined with carbonic acid may be easily calculated. The same method is applicable to the acids, particularly to vinegar, which was till now a very tedious and, at the same time, a very inaccurate operation. Dr. Will considers that the value of soda or potash can be thus determined with much greater accuracy than according to the method of Descroizell, improved by Gay-Lussac. If a soda contains a sulphite or a hyposulphite, which is almost always the case, the alkalimetrical method in use at present gives quite wrong results: the same is the case if potash contains phosphates, silicates, &c. Full details, with tables, will be given in a pamphlet, which will shortly appear, translated into English.

'On the Relative Electro-Negative Powers of Iodine and Fluorine,' by Rev. T. Knox.—The object of this paper was to controvert the statement made by Brande in his 'Chemistry,' that the fluorides are not decomposed by chlorine or iodine; and to show, as the result of experiments, that fluorine has been erroneously placed above iodine as a negative element.

'On the Electricity of High Pressure Steam, and a description of a Hydro-Electric Machine,' by W. Armstrong, Esq.—This paper recapitulated all that has been done in this very interesting inquiry. The author assents to Dr. Faraday's opinion, that the force with which the particles of water are rubbed against the glass, is, in this case, the cause of the developement of electricity.

'Eulogium on the late R. Kirwan, Esq. L.L.D.' by Dr. Pickells.—The author traces the progress of this very distinguished philosopher from the period when, by the death of his brother, who was accidentally shot while entering the Irish House of Commons, he retired from the bar. For his first efforts, a series of essays, he received the Copley medal, and he was elected a member of the Royal Irish Academy. Chemistry and mineralogy were the sciences to which Mr. Kirwan particularly applied himself. He was fond of metaphysics, and wrote a volume on logic. He also bestowed much attention on meteorology, and his essay on the variations of the barometer has obtained the approbation of Dalton and others.

'On the late Fires at Liverpool, and on Spontaneous Combustion,' by Mr. A. Booth.—This communi-

cation consisted merely of an enumeration of cases in which fires had, as it was supposed, originated in the spontaneous combustion of material used in manufactures—and the author suggested the propriety of the Association influencing government to institute an expensive series of experimental inquiries in this class of phenomena, which are but ill understood.

MONDAY.

SECTION C.—GEOLOGY AND PHYSICAL GEOGRAPHY.

'On the Granite and other Volcanic Rocks of Lundy Island,' by the Rev. D. Williams, F.G.S.—Mr. Williams described this island as a mass of grey granite, three miles long by about half a mile wide, flanked at its S.E. angle by slate rocks, which, beyond the immediate influence of the granite, had an E. and W. strike, and extended for about half a mile. The circumstances attending the granite were altogether unlike those of any granite mass of Devon or Cornwall. The usually abundant evidences of the processes by which the bounding rocks had been reduced and converted into granite in the vast volcanic laboratories, were all absent. He could not discover a vestige of a granite vein, nor could he observe any where a trace of gneiss, mica, or chiastolite slate. In Devon and Cornwall, he had often observed that the mineral characters of granite, especially in the veins, varied with the lithological constitution of the sedimentary or other rocks, out of which it had been derived, and with which it was so intimately associated. Besides, the incorporation, the welding, as it were, of the granite in veins with the sedimentary rock, was commonly so perfect that it was altogether impossible to separate them. Now at Lundy Island, although he had repeatedly tried at several visits, he never had succeeded in detaching a specimen of slate united with either the granite, trap, or porphyry, though it was considerably indurated and altered by them, and otherwise in precisely the same condition as the slates in Cornwall. He proposed, in reference to the agency of heat on rocks contiguous to igneous masses, to distinguish between *active* and *inert* heat—the former exerted in reducing the minerals to fluids, the latter simply indurating and otherwise partially altering them. The junctions of the slate and granite at Lundy, which were very clearly exposed on the N.E. and the S.W. evidenced nothing more than the operation of inert heat: the granite there was manifestly older than the slates; the slates were older than the traps; and the traps which traversed slate and granite were older than the porphyries, which cut off and shifted the traps.

'On the Discovery of the Remains of Fish, and other Fossils in the Killas of Cornwall,' by Mr. C. W. Peach.—These remains were discovered in the slaty rocks ranging E. and W. of Palperro: they occurred in tolerable plenty, though usually in a fragmentary condition. The most marked specimens appear to be fragments of the bony plates of Cephalaspis, the spine of Onchus, and the dermal covering, or shagreen, of the Sphagodes. The author also stated that he possessed a larger specimen, containing apparently the scales of a ganoid fish. At Goran he found a conglomerate in which are large rolled masses of limestone, with orthoceratites, crinoidea, and corals; and at Great Peraver there is a quartz rock, full of organic markings, resembling the tribes of the recent Sabellaria of the coast.

Mr. MURCHISON observed that this discovery confirmed, in a very remarkable manner, the view which Mr. Sedgwick and himself had taken of the age of these rocks. Those fish-remains appear to belong to the Upper Silurian, the oldest rocks in which the remains of any vertebrated animals have been discovered, and they occur in rocks forming the axis of S. Devon, which he had always considered the oldest in that country.—Mr. PHILLIPS stated, that the earliest discovery of remains of fishes in the slate rocks of Cornwall was announced in Sir H. De la Beche's Report; and he had himself figured in his 'Palæozoic Fossils' the scale of a holoptychius, found in rocks lower than the Plymouth limestone, agreeing, however, more nearly with a species from the carboniferous series than with that of the old red sandstone. Mr. Phillips regarded the fish-remains discovered by Mr. Peach as equally related to the carboniferous and Silurian forms, and probably belonging to an intermediate position, on a parallel with the cornstones of Herefordshire.

'On some Beds of Limestone in the Valley of Cork,' by C. Y. Haines, M.D.—This outlying portion of the carboniferous system is described as consisting of three thin beds of ferruginous limestone, interstratified with carboniferous slate and yellow sandstone, forming part of a series underlying the limestone of the Cork valley; it is situate at Riverstown, and crops out at the summit of an anticlinal elevation; the limestone and slate contain Encrinites, Turbinoliæ, Spirifers, &c. Dr. Haines also exhibited some rare and undescribed fossils from the Cork limestone, and a slab of millstone grit from Kilrush, County Clare, containing some new and extraordinary impressions, apparently of a marine Annelid, slightly resembling a species of Myrianites figured in Mr. Murchison's Silurian system, and occurring in the Cambrian slates.

Mr. GRIFFITH observed, that he had not been previously acquainted with this particular locality: he had no doubt these bands of limestone occurred at many other localities.

'On the old Red Sandstone, or Devonian, and the Silurian Districts of Ireland,' by R. Griffith.—The author stated that he should consider these two systems together, on account of the difficulty of separating the Silurian strata, which were characterized by fossils, from the Devonian, which in Ireland were only known by position and mineral character. The most northern district coloured as old red sandstone on Mr. Griffith's map, extends from Enniskillen, in the county of Fermanagh, to Pomeroy, in the county of Tyrone; and from Lisbellaw to Lisnarick, in the county of Fermanagh, occupying an area of about 300 square miles. To the north and north-west it is bounded by granite and metamorphic rocks, and to the east, south, and south-west by the carboniferous strata of Tyrone and Fermanagh. The lower beds of the latter series are usually unconformable to the brownish red sandstone and conglomerate of the system beneath. The second district of red sandstone described by Mr. Griffith forms a narrow ridge, known as the Curlew Mountains, and extends from Drumshambo, at the foot of Lough Allen, County Leitrim, in a western direction, by Moygara to Mullaghanoe Hill, in the county of Sligo, a distance of thirty-two miles, the breadth of the district being seldom more than three miles, and the greatest elevation 863 feet. The strata consist of a reddish-brown sandstone, covered unconformably by carboniferous rocks, and alternating with shale, and conglomerate which is occasionally trappean. North of Ballaghdeneen, County Mayo, there is a considerable tract of metamorphic conglomerate, passing sometimes into semi-porphyry, and at other localities becoming schistose, and passing into compact brown shale. In the midst of the metamorphic porphyry at Egool, immediately to the south of the Mountain of Mullaghanoe, is a series of rocks composed of alternations of brownish red sandstone and shale, greenish grey quartzite and slate, and impure limestone. Out of nineteen species from this limestone which occur in England, three belong to the Caradoc sandstone, three are common to the Caradoc and Wenlock formations, and sixteen to the Wenlock and Upper Silurian. Another district of the red sandstone and conglomerate is situated to the north of Castlebar, and occupies the same geological position in regard to the carboniferous series, as those already mentioned, but as yet no fossilliferous beds have been discovered within its limits. At Kildare the author had discovered thirty-two species of fossils in a mass of limestone: of these, eighteen are described in Mr. Murchison's Silurian system, all of which occur in the Caradoc sandstone, five of them, however, being common to the Wenlock and upper rocks.

Mr. PHILLIPS remarked, that, as the red colour of rocks was due to local physical agents, it could be of little value in classifying strata, compared with the evidence derived from organic remains. The red rocks, however, generally marked conditions of the ancient sea, unfavourable to organic life, so that this principal source of evidence was often wanting.

'On the Important Additions recently made to the Fossil Contents of the Tertiary Basin of the Middle Rhine,' by R. I. Murchison, Esq.—After a sketch of the geographical limits and geological relations of the tertiary deposits which occupy the Valley of the Rhine and Mayne, around the towns of Mayence, Frankfort, and Darmstadt, Mr. Murchison gave an account of the recent discoveries made by M. H. von Meyer, M. Kaup, of Darmstadt, and M. Braun, of Heidelberg. Of the animals of this tertiary basin, M. von Meyer had catalogued and was preparing for publication, 68 mammifers, 30 reptiles, 13 birds, and 8 batrachians—nearly all being undescribed species, and most of them of small dimensions. Amongst the new animals discovered by M. Kaup, were mentioned the Chalicotherium, a genus allied to Anoplotherium and Lophiodon; the Hippotherium, differing from the recent Equus in the possession of an additional metacarpal bone, and a minute saurian, named *Pisodon Colei*. M. Kaup had determined from an examination of the remains of various species of rhinoceros, tapir, &c. occurring in this deposit, that the Fauna of the period presented a close affinity to the types of the Indian and Sumatran archipelago, and were entirely distinct from all known European mammalia. He had also collected a large series of mastodontoid remains, which completely proved the views of Prof. Owen, respecting the identity of the American Tetracaulodon with the true Mastodon. The invertebrata of the deposit have been examined by M. Alexander Braun, and have been found to comprise 450 species, 303 of which are mollusca, and 103 shells,—of which, ten species only were identical with living forms. Many of the shells approach closely in form to those in the Calcaire Grossier of Paris, and this circumstance, together with the occurrence of the Anthracotherium, and of an animal intermediate between the Anoplotherium and Palæotherium, makes it probable that the deposit belongs to the same age as the gypsum beds of Montmartre, and the Ryde and Binsted strata of the Isle of Wight. These tertiary beds are covered with gravel, sand, and löss, containing ninety-six species of shells, fifty-six of which are terrestrial, and forty fluviatile. Of these, seven belong to species now living, and nine others are probably varieties of existing species—the most abundant species are very rare in a living state, whilst those now common are of unfrequent occurrence in the löss. With the shells are associated the remains of mammoth, rhinoceros, tichorinus, &c., the bones of which have evidently received very little injury from diluvial action; and from the frequent occurrence of entire skeletons, Mr. Murchison infers that these superficial deposits were formed by very tranquil operations, and that the great mammalia inhabited tracts immediately adjacent to the spots where they are now entombed.

Mr. OWEN stated, that the Mastodon of the Mayence basin was identical with the species found in the Norwich Crag, which was likewise a fluvio-marine deposit. He had not seen any bones in the English tertiary or drift, which could be distinguished from the ordinary horse or zebra, excepting a few teeth, which were more curved than usual, and might possibly have belonged to the Hippotherium.

SATURDAY.

SECTION D.—ZOOLOGY AND BOTANY.

The Rev. W. HINCKS, of London, exhibited specimens of abnormal forms in the flowers of Fuchsia. He remarked that there were two series. The first, in which the petals, sepals, and stamens were arranged in *fives*, the second, in which the sepals were in *threes*, whereas four is the normal number on which the parts of the flowers are arranged in the whole order Onagraceæ. The normal number of the parts, in exogenous plants, is five. The first series, therefore, which exceeded the quaternary arrangement of its flowers, might be looked upon as abnormal. In the second series the number of parts was reduced by the adhesion of the parallel edges of two sepals.

Dr. LANKESTER traced the abnormal developement of flowers to an increase, decrease, or alteration in the nutrition of the plant. This might be effected by injury to the plant, or by removing it from the circumstances in which it naturally grows. In the instance of the fuchsia, it evidently arose from cultivation. By experiments of this kind, ready-made in Nature, we might deduce the general laws of the developement of plants.

Mr. STRICKLAND then read the Report of the Committee 'On Zoological Nomenclature;' and stated, that several hundred copies of the Report printed in the last volume of the Transactions, had been circulated, and that the rules therein laid down for zoo-

logical nomenclature were very generally approved of in this country and on the continent. He then read a paper 'On the Structure and Affinities of *Upupa*, Linn., and *Irrisor*, Lesson.'—The African genus Irrisor, of Lesson, has been classed by various authors in the genera Upupa, Merops, and Epimachus, but as it is distinct from all these, and also from Brisson's genus Promerops, by which name later authors have called it, the term Irrisor of Lesson becomes its legitimate appellation. The author of this paper contended, that the peculiar characters of the beak, common to Upupa and Irrisor, but found in no other known group of birds, indicate, not an analogy, but a real affinity between them, and must therefore, taken in connexion with minor points of agreement in the form and style of colouring of the wings, and in the mode of nidification, be considered to preponderate over the various points of difference. We must, therefore continue to class Upupa and Irrisor (together with Rhimopomastus, which is hardly distinguishable as a genus from the latter) in one and the same superior group, Upupidæ. The next question is, in what part of the natural system the group Upupidæ, so restricted, is to be placed? They are certainly a very insulated group, but the combination of a long beak with a short tongue seems to show an affinity in one direction to the Alcedinidæ, and in another they probably lead through Epimachus to the Paradiseidæ.

Prof. Owen remarked that the author had alluded to the humming birds as living on honey; he believed they also took flies and other insects as food. The character of their flight and the structure of their stomach, adapted them for this kind of food.—Mr. Strickland knew, for a fact, that humming birds would live on sugar and water, although he made no doubt that they took insects whilst on the wing.

Mr. Strickland read to the Section a Catalogue of the Birds found in Corfu and the Ionian Islands, by Capt. H. M. Drummond, 42nd R.H.—In this list, which is of considerable extent, Capt. Drummond has inserted many valuable observations on the habits and migrations of the birds which occur in the Ionian Islands. The total number of species, in the list, is 198;—of these 159 are British, 38 are found on the European continent, but not in Britain, and 1, the *Calamoherpe olivetorum*, Strickland, has hitherto been found only in the Ionian Islands, where it is very common during the summer.

The next paper was a similar list, by the same gentleman, of the birds of Crete, made during a visit to that island in May and June, 1843, in company with Capt. Graves of H.M.S. *Beacon*.—From the shortness of the author's stay in Crete, this list is less complete than the last, but embodies many interesting facts. The total of species observed, was 105, of which 86 are British and 19 continental. It is remarkable that the common sparrow of Crete is the *Fringilla cisalpina*, while, in the Ionian Islands, it is replaced by the *F. domestica*.—Mr. Strickland expressed his pleasure at the progress which Capt. Drummond had made in ornithological researches. Such lists were of great value in forming tables of the distribution of animal life, and he bore testimony to the accuracy of Capt. Drummond's observations.

Mr. Strickland then exhibited to the Section the beautiful work of the Prince of Canino, called *Fauna Italica*, the fruit of ten years' labour. The Prince had, unfortunately, been prevented from attending this meeting, in consequence of the approaching scientific congress at Lucca, in September, but he had promised to be present at the meeting next year.

Mr. Thompson observed, that these lists of birds were more extensive and complete, than those of the French expedition to the Morea, in which several naturalists were engaged. He then exhibited to the Section, a specimen of the *Pycnonotus chrysorrhæus*, Swainson, shot near Waterford in January 1838, and belonging to Dr. Burkitt, of that city. This species of bird is a native of Africa, and has not before been noticed as visiting Europe. Mr. Strickland said this bird was quite new to the British Fauna. It was an extraordinary fact, that it should have been shot in this country in January, seeing it is a bird of tropical climates.

Mr. R. Ball, of Dublin, exhibited a specimen of *Cuculus glandarius*, which he had shot near Galway. He was sorry these rare birds were shot at so often, as in this manner all the individuals were destroyed, and birds that might become naturalized, were thus exterminated.

Mr. Thompson stated, that this was an interesting addition to the Fauna of Ireland, and that Mr. Ball had previously first observed the Carolina Cuckoo, as a native of Ireland.

Dr. Lankester then read a list of birds, and the date of their appearance and disappearance, at Llanwrest, in South Wales, drawn up by Mr. Blackwall.—This paper excited some discussion as to the causes which determined the acclimatization of birds and other animals.

Dr. Lankester then read the Report of the Committee appointed to inquire into the Varieties of the Human Race.—The Report stated, that the queries drawn up by the Committee for the purpose of eliciting further information on the varieties of the human race had been extensively circulated, and that many travellers, missionaries, and others had expressed their sense of their value in assisting them in their inquiries concerning the inhabitants of various parts of the world. It expressed a wish, on the part of the Committee, for a further grant, in order that they might more effectually carry out the objects they had in view. The value of the queries issued by the Committee, would be seen in the answers given to them by Mr. Heath from the Navigators Islands and New Hebrides.

Mr. Heath then read a paper, 'On the Physical Character, Languages, and Manners of the People of the Navigators Islands.'—The islanders were described as a fine race of people, the average size rather above that of Europeans—the colour brunette, the face oval, the hair black and rather crisp, and the eyes a fine black. Their language is at present scarcely known to philologists. It is spoken by about 60,000, and is a dialect of the wide-spread Polynesian. One of its marked peculiarities is, its reciprocal conjugation of the verb. Mr. Heath had entered very fully into a comparison of the Samoan with the Malay, and of several of the Polynesian languages among themselves, and of some of the Papuan dialects, and had obtained extensive vocabularies. With regard to individual and family life, the child is named after the god whose name is last invoked prior to the moment of birth. The mothers slightly press the forehead so as to give it a conical form: they rear their children tenderly. Circumcision is practised. They believed in a future state, but had rather loose and inconsistent notions as to what sort of state it is; some, they said, became gods, some were eaten by the gods, and the chiefs became living pillars in a large temple. The tradition with them is, that they came from the westward, and their elysium is Pulo-tu. Since Pulo is the name for island, this also indicates their origin. They are an intelligent people, and manifestly capable of improvement. The people of Tanna and the neighbouring island are in stature about five feet six or five feet eight, the legs rather short and ill-formed: they are neither so well-formed nor well-featured as the Samoans and other Polynesians. The complexion is the colour of dirty or worn copper coin, and they make their skin still darker by a deep purple dye; they also daub their faces with red, black, and other pigments. There is a mixture of the Papuans and Polynesians, for the people of Erranan and Immer have dialects very similar to the Samoan, and there are intermarriages between the tribes, so that the Polynesians are now nearly as dark-coloured as the Papuan. Various dialects were found, not only in the group, but even on one and the same island. The language spoken at Port Resolution is in some respects peculiar; it has a conjugation of the verb by prefixes, and not only a dual but a triple personal pronoun. The people of Tanna sometimes bury their dead in shallow graves, sometimes tie a stone to them and sink them in the sea. At Anatom, the widow is tied, alive, to the dead body of her husband, and sunk together with it in the sea.

The reading of these papers was succeeded by a great number of inquiries being made of Mr. Heath, on various points in the habits, language, &c., of the people with whom he had mixed. As specimens of the spoken languages of the people of the Navigators Islands, he read over the Lord's Prayer in the two languages they employ, the plebeian and the aristocratic. Prof. Owen stated that there was every encouragement for this committee to prosecute its labours. Many copious volumes had been written without eliciting so much information as had been gained in this instance by the queries issued by the Committee.

MONDAY.

Mr. Babington having taken the chair, Prof. Forbes exhibited several living animals which he had taken by means of the dredge off the coast of Cork.—Some of these were but rarely taken; amongst them were a white variety of *Cypræa nattica*, *Ophiura texturata*, *Buccinum reticulatum*, *Ophiotoma roscola*, several species of corallines and various crustaceæ, and specimens of the genus Polycera, Eurastia, Trochus, and a hermit crab.

Mr. R. Dowden then read an account of a Luminous Appearance on the Common Marigold: *Calendula vulgaris*.—This circumstance was noticed on the 4th of August 1842, at eight, P.M., after a week of very dry warm weather; four persons observed the phenomenon; by shading off the declining daylight, a gold-coloured lambent light appeared to play from petal to petal of the flowers, so as to make a more or less interrupted corona round its disk. It seemed as if this emanation grew less vivid as the light declined; it was not examined in darkness, which omission shall be supplied on a future occasion. It may be here added, in the view to facilitate any other observer who may give attention to this phenomenon, that the double marigold is the best flower to experiment on, as the single flower "goeth to sleep with the sun," and has not the disk exposed for investigation.

Dr. Allman believed that the phenomenon related by Mr. Dowden was not at all due to phosphorescence, but that it was referable to the state of the visual organ. This phenomenon had been thus, he thought, satisfactorily explained by Sir David Brewster. If it were phosphorescence, it would appear brightest at night, and it would be expected to occur in other plants than those of an orange or flame colour.—Mr. Babington stated that the cause of luminosity in plants was ill understood. He had seen, in the south of England, a peculiar bright appearance produced by the presence of the *Schitostega pennata*, a little moss, which inhabited caverns and dark places.—A Member present stated that Prof. Lloyd had examined the moss referred to by Mr. Babington, and had found that the peculiar luminous appearance of that moss arose from the presence of small crystals in its structure, which reflected the smallest portion of the rays of light.

Dr. Allman then exhibited to the Section, specimens of an Annelid, which was very common in the bogs of Ireland, and which was the cause of a luminous appearance.—It was closely allied to the earthworm: when irritated, it gave out a phosphorescent light, which was also much increased when the animal was exposed to the vapour of heated alcohol. The light was of a green colour. Mr. B. Clarke had found these annelids in the bogs of Connaught, and Dr. Allman had also found them in the N.W. of Ireland.

The next paper read was a list of the Insects found in the county of Cork, by W. Clear Esq.—When it became known that the British Association was about to visit Cork, it was proposed that lists of the Fauna and Flora of the county of Cork should be made out, as far as circumstances would permit, and the preparation of the list of insects devolved on Mr. Clear, as the only person who was known to have paid any attention to the entomology of that district. The list is so extremely imperfect, that the author desires it to be regarded only as a commencement. In it two orders, the Diptera and Hemiptera, have been altogether omitted, and several families, particularly those of minute size, have been scarcely noticed. The absence of a list of the dipterous insects is, however, the less to be regretted, as the insects of this order inhabiting the northern portion of Ireland have been already elaborated by A. H. Haliday, Esq. Mr. Clear's list consisted principally of Coleoptera and Lepidoptera, and comprised in all about 650 species.

Mr. Patterson remarked that there were many insects in the north of Ireland that had not as yet been found in the south, and *vice versâ*.

Dr. Power then read a Catalogue of the Plants found in the neighbourhood of Cork.—Amongst rare plants found near Cork, were *Medicago maculata* and *denticulata*, and *Hypericum calycinum*. Plants, which were not uncommon in other districts and rare here,

were also enumerated. The list contained 1425 plants, of which 624 were Cryptogamic.—Dr. Scott stated that he had found *Tragopogon parvifolius* apparently wild in the neighbourhood, and a long way from any spot where salsify was cultivated. He explained the nature of the flowering of *Ruppia maritima*, about which authors had made mistakes. When the anthers are nearly matured, the flowers rise to the surface of the water. They remain so for a little time, when the straight stem begins to assume a spiral form, and the consequence is the drawing down of the flower under the water.—The Rev. W. Hincks thought the *Hypericum calycinum* was an introduced plant. *Iris tuberosa* had been admitted into the catalogue of plants by Mr. Drummond, but this was evidently an introduced plant. The *Cryptogamic* plants of Ireland had been carefully investigated. They were much indebted to Miss Hutchins and Mr. Harvey for their knowledge of the Algæ.

Mr. Thompson, the President, then exhibited to the Section a number of specimens of phanerogamous and cryptogamous plants, accompanied with a catalogue of the plants, which had been collected by Dennis Murray, a working gardener, near Cork. Dennis Murray had, by his labours, added three new species of plants to the Flora of Ireland, and twenty-two new species to that of Cork.

Mr. Thompson, on behalf of Mr. Hyndman, of Belfast, exhibited to the Section a specimen of that singular annelid, which forms for itself a quill-like case, the *Nereis tubicola* of Müller, described and figured in the 'Zoologia Danica.' The present is the first announcement of it as a British species. Three or four specimens were dredged from a depth of forty fathoms, off Sand Island, on the western coast of Scotland, by Mr. Hyndman, in July, 1842.—Mr. Thompson also read a description, drawn up by Mr. Hyndman, of a species of hydrostatic Acalepha, taken in Belfast Bay, in August, 1841. It is the first record of any species of the family Physsophorida occurring in the British seas. The species being considered new, has been named by Mr. Hyndman *Apolemia Gettiana*.

Mr. Peach stated that he had found *Nereis tubicola* on the coast of Cornwall.—Mr. Patterson was glad of the last announcement of Mr. Thompson, as it indicated attention to the family of the Acalephæ, which, he was convinced, were very abundant on our coasts, but which had yet received but little attention.

Mr. Thompson exhibited specimens of the Alpine Hare (*Lepus variabilis*), from the Highlands of Scotland, and of the Hare of Ireland (*Lepus hibernicus*), for the purpose of showing that the species are identical. Of this fact he, judging from external characters, satisfied himself last autumn, when in the Highlands of Scotland, and subsequently proved it by a comparison of the anatomical characters of the two supposed species.

'On the Microscopic Structure of Shells,' by Dr. Carpenter.—The author stated that all the solid calcareous shells of molluscous animals possessed organic structure, in the same manner as the teeth of the higher orders of animals; amongst recent shells this structure is characteristic of various natural groups, and will, therefore, probably afford valuable assistance in the determination of fossil genera and species. The principal varieties of structure were described as consisting of modifications of two simple forms, the Cellular and the Membranous. Of the first of these, the Pinna affords a good example: it consists of prismatic cells, like the cellular tissue of vegetables, filled with carbonate of lime; and if placed in acid, the lime will be removed, and the membrane alone remain, still preserving its cellular structure. In old specimens of the Pinna the animal matter is sometimes destroyed, leaving only the calcareous part of the shell, composed of minute spiculæ of carbonate of lime, which crumble under the finger. Cellular structure is found in all shells belonging to the order Margaritaceæ. With these the Pinna should be placed, since the Mytilaceæ, with which it has been hitherto classed, possess a different structure. Deshayes, in the new edition of Lamarck, upon a comparison of the characters of the genus Pinna, considers it more nearly allied to Avicula than Mytilus. In the fossil genus Inoceramus, traces of the cellular membrane may be discovered by dissolving the shell in weak acid. The anomalous genus Pandora also exhibits its cellular structure in its thick outer layers, the inner layers being nacreous. Dr. Carpenter proposes to place this genus with the Margaritaceæ. The second class of shells described by the author includes those possessing the Membranous Structure. In these the calcareous matter is deposited in laminæ, separated by excessively thin membrane, which forms, in fact, a secreting surface. This membrane does not lie flat, but is usually extremely corrugated and folded, and these folds being repeated in a regular manner, give rise to the nacreous lustre of the shells. Fragments of the Haliotis, after being laid in acid for a week, are still nacreous. A similar structure is also found in the Cowry and other porcellaneous shells, which are composed of three layers, the direction of the folds being different in each layer, as seen in the fracture of the shell. Another peculiarity in the internal structure of some shells consists of *minute tubes*, ramifying copiously over the different layers of membrane, and sending branches into the adjoining laminæ. Both the membranous and tubular structure are found in the *Avicula cygnipes* of the Lias, showing that it belongs to the natural order Pectinidæ, and not to the Margaritaceæ. Mr. Phillips was aware, at the time he published this species, that it was nearly allied to the genus Lima and other Pectinidæ. The structure of the Brachiopoda is peculiarly plicated; and in the true Terebratulæ all the laminations are perforated by minute holes, going quite through the shell. In a transverse section these perforations are seen to enlarge as they approach the inner surface, forming funnel-shaped openings, lined by a membranous prolongation of the mantle, which is closely adherent to the inner surface of the shell. In one recent species, the *Terebratula psittacea*, the perforations are wanting; but in this species the structure of the hinge is also different, bringing it near a particular division of the fossil Brachiopoda (Atrypa, Dolman). Most of the fossil Terebratulæ that are *deeply plicated* also want the perforations, and these probably constitute a separate group. In concluding, Dr. Carpenter pointed out some of the peculiarities in the structure of the Echinodermata, which have been noticed by Agassiz in his Monograph. The calcareous plates of an Echinus consist of numerous thin laminæ, connected by little pillars; and as the laminæ are punctured all over, whichever way a section is taken it exhibits a minute net-work. This structure, which prevails in the solid parts of all the Echinodermata, explains the facility with which they absorb fluids. Dr. Carpenter also exhibited diagrams of several beautiful forms of structure in the spines of different species of Cidaris, and in the plates, forming the column of several fossil and recent Pentacrinites, showing that a different arrangement of the internal particles obtained in every species. This structure is well preserved in the fossil species, although they possess a regular crystalline cleavage.

Dr. Allman referred to some points of analogy between the microscopic structure of the shells of the higher molluscs and those of the Ascidæ.—Dr. Lankester compared the structure of the cells in molluscs with those of some plants.

Dr. Harvey furnished a catalogue of the vertebrata of the county of Cork as compared with those of Ireland generally, and Great Britain; by which it would appear, that of 630 vertebrated animals, there are 445 found in Ireland, and of these 285 in the county of Cork. There are of—

	British.	Irish.	Cork.
Mammalia.....	67	28	23
Aves.....	312	253	161
Reptilia.....	15	7	2
Pisces.....	236	157	99

Turdus Whitei and *Naucrates ductor*, included in this catalogue, had not been observed before in Ireland. *Glareola pratincola* is noticed as having once been shot in the county of Cork, but the specimen was not preserved.

Dr. Lankester then read the following extract of a letter from Mr. Denny, of Leeds:—"During the recent meeting of the Provincial Medical Association, in Leeds, a medical friend of mine informed me that a pair of grey parrots had hatched and reared a young bird in his village. This struck me as something novel; at least, so far as rearing the young parrot was concerned, as I was previously aware that parrots will lay eggs in this country, but I have never heard of an instance of hatching. I therefore put down several queries for my friend to get me answers to on his return, which I now forward to you, thinking, if the occurrence is really *new*, it might interest some of the members of the British Association, at Cork:—'The two old birds were purchased in the market at Sierra Leone, in 1840, when about six months old, and brought to England in the same cage; but were then separated until February, 1842, the male being left at Hull and the female brought to Riccal. She first commenced laying in July, 1842, and laid three eggs, which were taken from her as she laid them. She began to lay this year about the 10th of June, and laid two eggs, which she sat on exactly four weeks, and brought off one bird only, which was hatched on Sunday, July 16. They are fed upon boiled flour pudding, which the old birds masticate and feed the young bird with. The old lady, the owner, also frequently chews a little pudding and allows the young bird to take it from her mouth. Both birds sat upon the eggs in turn, and the male frequently pushed the female from the eggs for the purpose. The young bird was blind about sixteen days, and quite bare of feathers or down. It can now (August 5) see, and is beginning to be downy, and is growing very fast, and appears a very strong bird.'" Dr. Lankester also exhibited from Mr. Denny, a specimen of a Carabus, completely covered with parasites, which he supposed to be *Europoda vegetans*.

SATURDAY.

Section G.—MECHANICAL SCIENCE.

Mr. Dircks read a paper 'On the Prevention of Smoke by Mr. Williams's Furnace,' the main principle of which consists in admitting atmospheric air at the ordinary temperature behind the bridge of the chimney, and thus supplying oxygen for the combustion of the heated gases. The furnace, and the principle of its action, were fully explained by Mr. Williams himself at the preceding meeting of the Association. The discussion which ensued did not elicit any new facts or opinions.

Mr. Chanter next described his Furnace for Economizing Fuel, which differs from Mr. Williams's in the two essential particulars of heating the air before it is admitted to the fire, and of giving a reciprocating motion to the fire-bars, for the purpose of freeing them from clinkers and ashes. The air is admitted into an air-chamber to be heated, and a "deflective arch," at the bottom of the boiler, turns the generated gases on to the hot fuel, supplied with its requisite portion of oxygen through the clear fire-bars.

MONDAY.

Mr. Scott Russell continued the reading of the 'Report of the Committee on the Form of Ships,' which he had commenced on Saturday.—This Report was voluminous; containing the reductions of a large number of experiments, and about 20,000 observations, made on more than 100 vessels of different forms; accurate drawings of all of which, on a large working scale, were laid on the table. It was the hope of the Committee that this Report might be published, in order to give the public all the benefit which accurate knowledge on this point was likely to convey. He did not, therefore, enter fully into the details of these voluminous results, but would confine himself to a general account of the objects which this Committee had in view, the methods of inquiry which they had adopted, and a few of the more general conclusions to which they had been led. These experiments had now occupied the attention of the Committee during a period of five or six years, and it afforded him peculiar pleasure to be able to present the concluded investigation to this meeting. It was appropriate to this meeting, inasmuch as Cork was an important sea-port, of increasing prosperity, whose interests were involved in everything tending to the improvement of our mercantile navy: it was further appropriate, inasmuch as there existed in the vicinity of Cork a class of the fastest sailing vessels in existence—he meant the fleet of yachts—by the successive trials of which many improvements had been made in the form of vessels; and, indeed, he considered it due to the yacht clubs of this country to say, that much had everywhere been due to their exertions in the improvement of the speed of our ships. He had had the good fortune to find in Cork a gentleman who, in the recesses of his own study, had been carrying on, for many years, valuable scientific investigations on this subject, who had submitted his

views to experiment with great success, but had long felt the want of just such a series of researches as he had this day the pleasure of laying on the table. The beautiful models by which the Report was illustrated, had been constructed by Dr. Phipps, to whom he had thus alluded; and in Mr. Beamish, also a native of this place, he had found another scientific and successful investigator in the same field of inquiry. On this account he should enter more fully into this subject, as one in which Cork was especially interested. It had long been the reproach of science, that so little had been done to enable the practical man to proceed with certainty in his attempts to improve the speed of ships. There are some points in which science has done all that can be desired. The immersion of a ship, her trim, her centre of buoyancy, her stability, can all be determined, with accuracy, beforehand, and the scientific naval constructor can proceed with certainty upon fixed principles. It is otherwise with the speed and resistance of a ship. In nothing does calculation more completely fail them than in the attempt to determine beforehand the speed of a ship constructed on given lines, or to show how a form may be so altered as to render it faster than before. To calculate the resistance opposed by the water to the passage of a ship through it, and to find that form which, at a given velocity, will pass through the water with least resistance, and, of course, with the smallest expenditure of power—such was the problem hitherto the least solved, and always one of the most important, which these experiments were intended to investigate. There were also two phases in which this problem presented itself, the Scientific and the Practical view of the subject. There were, therefore, two classes of experiments—one designed to advance our knowledge of the laws of hydrodynamics which govern the phenomena of resistance of fluids, and the other, the experiments serving as a basis to the operations of the practical construction of ships—the *Experimenta lucifera* and the *Experimenta fructifera* of Lord Bacon. To the latter class, he would confine the remarks of to-day, as belonging more especially to Section G, the former having been discussed in Section A. Many experiments had formerly been made on this subject, but we had, at that time, so imperfect a system of hydrodynamics, that the conclusions drawn from them could not be relied on with confidence by the practical man. The Academy of Sciences had made a series of such experiments at a large expense defrayed by the French government. Colonel Beaufoy, in our own country, had made an important series of such experiments, at an expense of 30,000*l.*, but these were of comparatively little value, for the same reason, viz., that the forms did not comprehend such forms as were actually required for the purposes of naval construction, and because the state of science was not such as to enable us, from the resistance of one form, to deduce with certainty that of another. For the purpose of giving practical value to the present series, experiments had been made on many different scales of magnitude, some in narrow channels, others in large canals, and finally on the open sea. Some were made on models 3 feet in length, others of 10 feet, some on vessels 25 feet long, 75 feet long, and some on vessels 200 feet long, and nearly 2000 tons capacity. Thus it was trusted that the scale of the experiments was such as to give confidence in the results. Next, as regards the forms of vessels made the subject of experiment, these were similar to those required for the practical purposes of construction. One class consisted of such forms as were required for steam navigation. Plans of steam ships of the best construction and others of worse forms, were accurately laid down on the same scale, in the same way, and with the same accuracy of proportion as if they had been for actual service, and along with these were some of new forms. A given form having been found to be a good one, was then varied by lengthening, first in one manner then in another, to discover the best mode of improving a given good form. In sailing vessels, some of the celebrated Chapman's best forms were taken, and treated in a similar manner, and along with them were compared the common forms of merchantmen and other ships. The class of fast-sailing yachts and cutters was treated in the same way, the object always being the determination in given circumstances of the method of giving such a form to a ship as shall enable her to pass through the water with the least resistance, the greatest velocity, and of course the smallest expenditure of force, power, and money. The methods of drawing these vessels through the water, varied with the scale on which the experiments were made. Those on the smallest scale were drawn by a weight arranged in such a manner as to supply a uniform force through any given distance.—and on the largest scale, the experiments were made on the sea by means of powerful towing vessels. In this way the experiments were made on a wide range of magnitudes, both as regarded the vessels themselves and the sheet of water on which they were propelled, an element of resistance not always sufficiently taken into account. The resistance was accurately measured by dynamometric apparatus of great accuracy, through which the moving force was communicated to the vessel; the velocity being determined, in certain cases, by a peculiar apparatus designed for this purpose, and in other cases by instruments for measuring and marking time with accuracy. After the observations had been reduced by independent calculators, and not till then, were they made the subject of special examination, with reference to any theory; and thus it was conceived that the greatest amount of authenticity had been secured. The author then proceeded to give to the meeting a number of specimens of the results which the experiments afforded, such as he knew were likely to interest those members of the section who were acquainted with the principles of naval construction. He demonstrated a remarkable law, by which it appears, that each velocity has a corresponding form and dimension peculiar to that velocity; and he showed, in a variety of diagrams, the means of constructing such forms. To show how much influence *form* alone, without any other element or dimension, affects the question of resistance, he adduced the following as one of the most important experiments. Four vessels were taken, having all the same length, the same breadth, the same depth, the same area and form of midship section, and all loaded to the same weight, displacement, and draft of water. The only difference being in the character of the water-lines; No. 1 being of the new form indicated by these experiments as that of least resistance; No. 3 the old form, very nearly the reverse of the first; No. 2 intermediate between them, and No. 4 intermediate between No. 1 and No. 2. The following table shows the result of the comparative trial:—

Speed in miles per hour.	Resistance, in pounds.			
	No. 1.	No. 2.	No. 3.	No. 4.
3 miles.	10	12	12	11.3
4 ..	18	22	23	21
5 ..	28	38	42	35
6 ..	39	61	72	56
7 ..	52	96	129	84

These differences showed how much might be gained, everything else being equal, by the adoption simply of judicious form in the construction of the water-lines of a ship. The vessel No. 1 was constructed on the wave-line; the methods and rules for which he proceeded to explain in diagrams, too numerous for our space to admit. But we hope the speedy publication of the Report itself may soon remedy this omission.

Mr. PERRY observed that the position of the paddle-wheels in steam vessels was an important subject, which required to be determined, especially as different opinions were entertained by practical men whether the paddles should be nearer to the stern or to the head of the vessel.—The MARQUIS OF NORTHAMPTON remarked on the importance of these experiments, which had been carried on by the British Association. The results would possibly produce a change in the naval architecture of every country in the world; and if the British Association had done nothing else than carried out these experiments, and attained those important results, all the efforts they had made would have been amply rewarded.—Mr. J. TAYLOR observed that these experiments had been carried on for five years, and that the late Sir J. Robison, who had been associated with Mr. Russell in their prosecution, had watched over them with great anxiety till within a short period of his death. The Association had expended 850*l.* in making these experiments, and now came the question, what was to be done with the valuable body of information that had been collected? It ought not to lie idle on their shelves, but ought to go forth to the public; and the best manner of accomplishing that would be a subject of consideration for the Council.—Mr. RUSSELL said, that with regard to the position of paddles, the subject had been already taken up by the government, and some practical results might shortly be expected. In conducting the experiments for the British Association, Sir J. Robison and himself having satisfied themselves as to the correctness of their system, they had endeavoured to get it introduced without exciting opposition. The experiments were made in a ship-building country, and ship-builders every now and then borrowed the forms of the boats that had been found to move the fastest through the water, and thus they had been gradually introduced. The *Flambeau*, which was built on the Clyde in 1839, on one of the experimental lines, beat a vessel of greater length, though having but 75 horse-power against 120. In smooth shallow water the vessel on the old construction was a match for the *Flambeau*, but in a deep and heavy sea the experimental vessel beat the other by two miles an hour. There had been since constructed in that part of the country a whole class of vessels built of that form. The *Great Britain* had the wave water-line; and the *Vanguard*, which made her passage last week from Dublin to Cork in two hours less time than had ever been previously accomplished, was constructed by the same builder who had made the models for the British Association experiments.

Mr. PERRY mentioned that he had received a letter from Dublin, announcing the complete success attending the opening of the Atmospheric Railway on the branch of the Kingstown and Dublin line. The length of the atmospheric rail was one mile and three quarters; and the average gradient 1 in 100. After forty strokes of the stationary engine the vacuum gauge stood at 17 inches; after 100 strokes it was at 21$\frac{1}{2}$; and it was ultimately raised to 22. The carriages were filled with passengers, and they ascended the line at a speed of twenty-eight miles an hour. When the machinery had got into proper working order, it was expected that a speed of at least fifty miles an hour would be attained.

Prof. MOSELEY'S Report of Experiments on Steam Engines, with Morin's Instrument for Measuring Velocities, was read by Mr. J. Taylor.—The experiments have not been completed, and the present communication was rather to report progress to the meeting, than to state results. The object had been to ascertain, by actual experiment, the velocity of the piston of a single-acting Cornish pumping-engine at all points of its stroke. There had not been sufficient time since procuring Morin's instrument to obtain the requisite data, and to work out the calculations necessary for comparing the results of experiment with those of theory, and by this means to elicit the useful information which it is hoped this comparison will offer to practical science. Morin's velocity-measuring machine was received from Paris five months ago, and by it spaces described in the 20,000th part of a second may be easily discerned. It describes a curve somewhat resembling the epicycloid, and from this curve the velocities are ascertained. The principle of the indicator, by which the experiments were made, is this: a circular disc of cardboard is made to revolve on a fixed axis, and a revolving pencil, connected with the piston, describes the indicating curves. The disc which was sent as a specimen indicated the result of experiments made at the Cornish engine at Old Ford. The results were, that the piston of the engine at Old Ford, on the day of experiment, acquired its maximum velocity of ten feet a second at four feet of stroke, and from that point the velocity gradually diminished, until the piston was brought to rest.

Mr. HAWKINS described Perkins's Marine Propeller, for the purpose of keeping that plan of propulsion before the public, as he conceived that it had not yet had a fair trial. Mr. Perkins's plan is to have two propellers, shaped like windmill vanes, fixed at the stern of the vessel on the same shaft, though moving in opposite directions. Each of these paddles is six feet long, consequently their action is more powerful than that of the Archimedean screw, and the revolutions may be proportionally slow. He conceived that this propeller would be well adapted to the *Great Britain* steam vessel, as the screw pro-

peller at present attached would not, he thought, be sufficient to propel so large a vessel.

Mr. BEVAN exhibited a model of a complicated kind of Paddle Wheel, intended to be so contrived that the floats should enter the water and come out of it perpendicularly. It was proposed to effect this by having the floats moveable and weighted, so as to keep them perpendicular by their own gravity.

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TO ANTIQUARIES.

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HINTS TO SECRETARIES OF READING SOCIETIES.

It has been asserted by Malthus and his disciples that the production of human food increases only in an arithmetical progression, while the race of consumers goes on doubling in a geometrical ratio. The same, however, cannot be truly predicated of food for the mind, the number of publications intended to amuse or instruct having increased within the last few years beyond all reasonable calculation.

The consequence of this restless and increasing energy in what may not unaptly be called *the book manufacturing districts*, is that in the bygone year no fewer than seventeen hundred new works and new editions have been published in London alone,—giving us a rate of nearly five books *per diem*, Sundays included. Now, if we take these at the most moderate average of price, a single copy of the aggregate would fall little short of eight hundred pounds, a sum scarcely within the reach of any purchaser. It is true that no one reader would want, or could possibly get through, so many volumes in the twelvemonth; but then people's tastes are so various, that a library, to be generally useful, must embrace almost everything. But, beyond this, there is another evil, which no prudence can get over, and which alone would prevent any reasonable individual from attempting to form a collection. Such and so great is the advance of science in the present age, that a book in a twelve-month may become obsolete, halting lamely behind the rapid march of intellect: the tree of knowledge is constantly,—nay, almost hourly,—pushing forth fresh leaves and fresh fruit, which must be gathered on the instant. Who, for instance, would in these days waste a single hour on Goldsmith's History of Rome, when the recent discoveries of Niebuhr have sufficiently proved that the whole of it, from title-page to colophon, is no better than a bundle of monstrous lies,—in fact, a Roman "Baron Munchausen"? Nor is the matter at all mended when we come to works of fiction: the majority of them are much too ephemeral in their nature to make them desirable objects of purchase. Until the last few years the perusal of substantial works could not be had except by buying, or in some public institution, while circulating libraries were the repositories of novels, and nothing but novels. This defect forced those who wished for the perusal of something more than the mere ephemeral literature of the day to form themselves into reading societies. But this necessity no longer exists—many of the leading Librarians have deviated from the old beaten track, and launched out into the realms of the useful. In Churton's Library, Holles-street, Cavendish-square, is such a voluminous collection of our Standard Authors, as well as such an abundant supply of all the best Modern Works on Art, Science, and Literature, that Book-Clubs will find it infinitely better and cheaper to subscribe there than to buy on their own account. But on these occasions there is nothing like the plain unanswerable statement of figures. We will therefore suppose that a country Book Society had a fund of Twelve Guineas per annum, and after deducting two guineas for expenses of carriage, &c., subscribed ten guineas—for this sum they would be entitled to thirty volumes at one time, of which twenty would be of the newest; these they might exchange as often as they liked, but for the sake of our illustration we will say ten times during the year; thus they would have during that time ..... 300 vols.

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